

# MOTOR AGE

## GLIDDEN TOURISTS ARE NOW HEADED NORTH



PILOT DAI LEWIS

**L**AWTON, OKLA., June 22—Special telegram—Of eleven cars which up to 8 o'clock have checked in here tonight, only three have had perfect road scores, these three being No. 5 Chalmers driven by Bolger, No. 103 Lexington, in the Chicago trophy class, and driven by J. C. Moore,

and No. 107 Maxwell in the Chicago competition and driven by Jesse Illingsworth. These cars reported a most harrasing day's work, with many miles of deep sand, which, beneath a burning sun and stirred up by a hot wind, made the conditions almost unbearable. Passengers and observers are reported to have been put to sleep by the heat several times, one driver having to hold his observer in the seat beside him at all times.

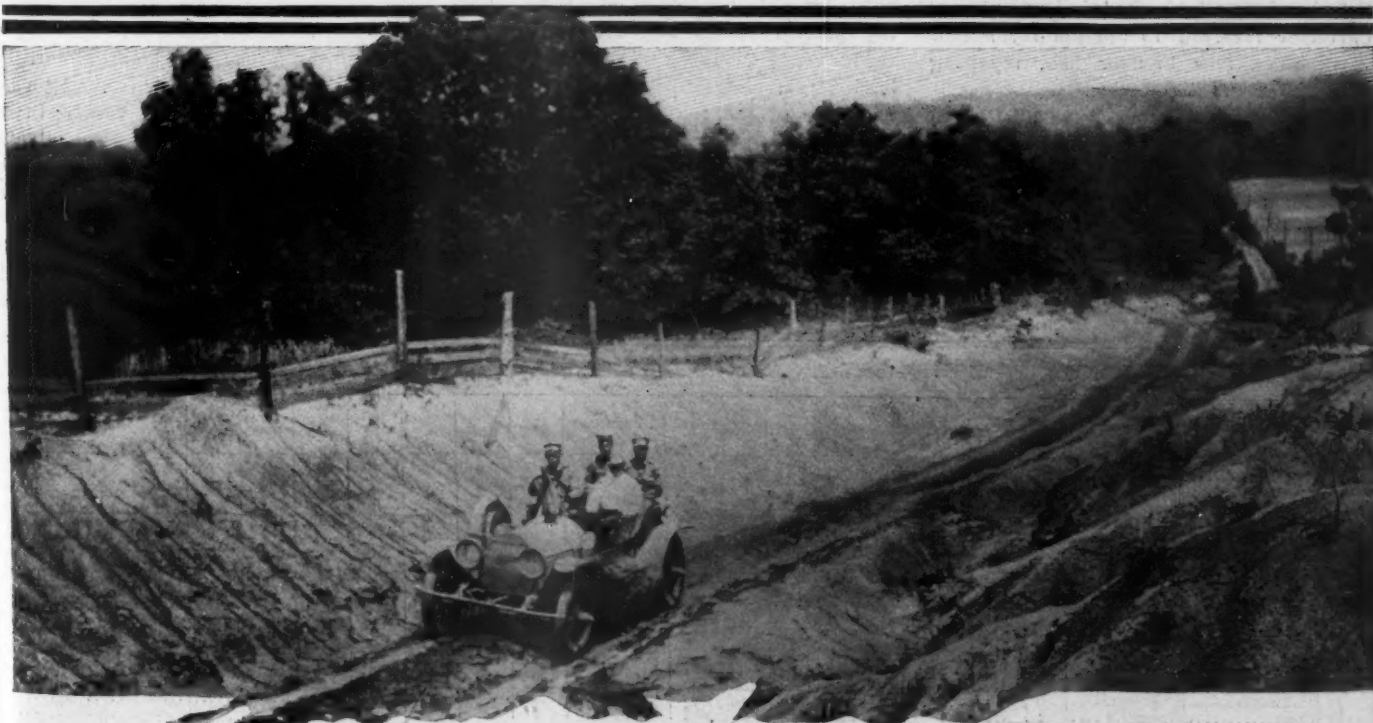
So hot was it that the green leaves on the corn were being burned and turned brown. Some of the drivers had to take the precaution of sleeping for over half an hour under the car in the heat of the day to avoid prostration. The three Moline cars with their skeleton tops were favorites today, and it is a certainty that in future tours tops of this nature will be in great favor.

Of the cars that were penalized today many of them were demerited for having to take on water before the 100-mile limit



STARTER E. L. FERGUSON

was reached, and even after filling at the noon stop at Terral there were several cars that had to fill during the afternoon. It was not so much the running in sand as the hot winds that worked against the radiators. It has been demonstrated clearly during the last 3 days, when these



CADILLAC CARRYING CADETS ON GRADE NEAR ESARY SPRINGS, BETWEEN SHEFFIELD AND MEMPHIS



LIGHT TOP USED ON MOLINES

burning winds have been exercising their force, that many radiators that are generally adequate for the severest use become entirely inadequate for the work of the last 3 days. One example of this was a car that yesterday would boil the water out at speeds over 21 miles an hour in the heat of the day, but as the cool of evening came around the water could not be boiled at 40 miles per hour. This is unusual heat in these sections, and the referee has decided that because of this water may be taken on at practically 60-mile points.

Today's penalties are: No. 1 Premier, 3 points, for taking on water; No. 3 Chalmers, 3 points, for repairing feeder; No. 4 Chalmers, 12 points, for taking on water four times; No. 7 Maxwell, 43 points, for a new spring clip and a new radius rod; No. 10 Glide, 104 points, for putting in a new spring; No. 101, 3 points for water, and No. 102, 3 points for water. No. 2 Premier has not checked in yet. No. 9 Cartercar received 15 5points for a new spark plug, new breaker box, repairing magneto and radiator.

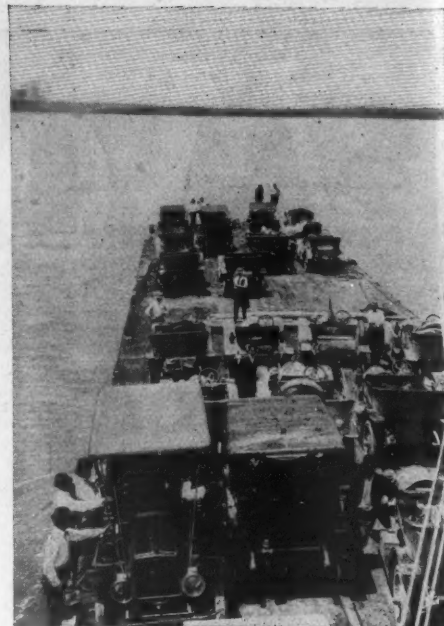
Today's run of 200 miles from Dallas to this city has been made under intense heat conditions. The relentless sun poured down upon the contestants as it would on an arid desert. Fortunately a 6 o'clock start from Dallas aided a little in the early hours.

The route followed lies through Fort

Worth, where 30 minutes was spent by way of visiting with that city. A 45-minute noon control was established at Terral, Okla., 130 miles from Dallas. The roads today have been good tracks over the plains, which made the 16 and 18-mile-an-hour schedules not too strenuous, although it must be admitted that, due to the heat and not a symptom of shade from start to finish of the run, the heat is more fatiguing and is really working twice as great hardships as the distance.

The Columbia pacemaking car and the Chalmers pilot cars were both overtaken by Ray MacNamara in No. 1 Premier, so that the contest car played the triple role of pilot car strewing the confetti, pacemaker carrying the referee and contestant for the Glidden trophy. It is not just to a contesting car to ask it to carry the confetti, and before tomorrow additional pilot cars will be arranged for to insure the distribution of the confetti before the contesting cars get along the route.

The start this morning was made at the usual minute intervals, and just as the last cars were checking out the Cino, which broke the driveshaft in its rear axle yesterday, drove into Dallas, having made a new driveshaft at Paris. The driver and observer immediately took breakfast and checked out on the day's run. Not so good fortune awaited C. F. Van Sicklen in his Falcar, contesting for the Chicago trophy, and which broke the rear axle sleeve yesterday. A new axle was rushed



ON BARGE AT HELENA, ARK.

out from Dallas so that Van Sicklen should have reached Dallas before midnight, but unfortunately the relief car with the new axle ran out of tires and had not reached the disabled Falcar near Honey Grove this morning. Van Sicklen has wired that he will catch up with the tour tonight, and in spite of fairly heavy penalties because of delay will continue to Chicago as a regular contestant, despite the many penalties incurred.

## Day by Day Progress of the Cars

NASHVILLE, TENN., June 15—All twenty-six of the contesting cars in the Glidden and Chicago trophy divisions checked in at Nashville tonight, seven of the fourteen Glidden aspirants, or 50 per cent of them, having perfect scores and ten out of the twelve cars in the Chicago trophy also having perfect technical scores. The performance of the ten cars in the Chicago division is a particularly remarkable one. The general nature of this strenuous trip was told in these pages last week, so that nothing remains now but a recital of the performance of the different cars. No. 3 Chalmers received 20 points for changing a spark plug, the penalty being at the

rate of a point a minute while working on the change. No. 6 Cole received, all told, 75 points for cleaning out the gasoline line and putting in a new steering knuckle arm. No. 9 Parry was assessed 3 points for changing spark plugs on the road. No. 11 Ohio was taxed 75 points for repairing the radiator and adjusting the carbureter. No. 12 Ohio lost 100 points for inserting a new valve and valve spring. Lastly in the Glidden ranks was No. 14 Pennsylvania, with 94 points imposed for straightening a steering arm and knuckle and repairing a radius rod connection.

In the Chicago trophy division No. 105 Parry lost 4 points for tightening bolts and nuts. No. 19 Cartercar lost 46 points

TABLE SHOWING EQUIPMENT AND PENALIZATIONS OF THE GLIDDEN TROPHY CARS

No.	Car	Driver	No. of Cars	Bore	Stroke	Carbureter	Tires	Magneto	1st day	2d day	3d day	4th day	5th day	6th day	7th day	8th day	9th day	Total to date
1	Premier	McNamara	6	4 1/4	5 1/4	Stromberg	Goodrich	Bosch	0	0	0	0	0	7	0	0	3	.....
2	Premier	Ballinger	4	4 1/4	5 1/4	Schebler	Diamond	Bosch	0	0	0	97	0	10	0	0	.....	.....
3	Chalmers	Gardham	4	4	4 1/4	Mayer	Goodrich	Bosch	0	20	0	162	0	0	0	18	3	.....
4	Chalmers	Matson	4	4	4 1/4	Mayer	Goodrich	Bosch	2	6	0	89	0	0	9	6	12	.....
5	Chalmers	Bolger	4	4	4 1/4	Mayer	Goodrich	Bosch	0	0	0	0	0	0	0	0	.....	.....
6	Cole	Knight	4	4	4	Schebler	Diamond	Splitdorf	75	0	3	With drawn	n	.....	.....	.....	.....	.....
7	Maxwell	Wells	4	4 1/4	4 1/4	Maxwell	Ajax	Splitdorf	0	0	0	0	0	0	6	4	42	.....
8	Cartercar	Mahoney	4	4 1/4	4 1/4	Schebler	Goodyear	Splitdorf	0	0	0	0	135	0	28	505	.....	.....
9	Parry	Dull	4	4 1/4	4 1/4	Schebler	Diamond	Kurtz	3	3	0	0	20	0	8	0	155	.....
10	Glide	Castle	4	4 1/4	5	Schebler	Diamond	Eisemann	0	0	11	0	0	0	0	0	104	.....
11	Ohio	Stockhard	4	4 1/4	4 1/4	Schebler	Goodrich	Splitdorf	75	0	0	0	0	With drawn	n	.....	.....	.....
12	Ohio	Hillock	4	4 1/4	4 1/4	Schebler	Goodrich	Splitdorf	100	0	48	With drawn	n	.....	.....	.....	.....	.....
14	Pennsylvania	O'Donnell	6	4 1/4	5 1/4	Miller	Jelco	Bosch	1042	0	With drawn	n	.....	.....	.....	.....	.....	.....
15	Cino	Donnelly	4	4 1/4	5	Stromberg	Diamond	Remy	0	0	0	0	0	32	45	0	.....	.....





FERRY AT HELENA, ARK.

for reversing a spring shackle and straightening a cross member of the frame. In this list the penalties for being late at noon and night controls are not given.

#### From Nashville to Sheffield

Sheffield, Ala., June 16—Today's run of 119.7 miles has been one of the shortest in the tour and one of comparative ease, although offering obstacles that were considered very serious ones a week before the tour started. The first stage of the

bureters. Several contestants hung rubber aprons over the radiators to prevent water splashing inside, but there was no need for such precautions. This act on the part of many provoked considerable discussion as to whether such was permissible, and the referee waived all such penalties as might have been imposed.

In addition to these creeks there were many short and very steep hills that made slow time imperative. The country passed through after leaving Columbia was not inviting until Florence, 6 miles from Sheffield, was reached.

In spite of the shortness of the day's run and the comparative ease of the roads, penalties were in order as follows: No. 1 Premier, perfect; No. 2 Premier, perfect; No. 3 Chalmers, perfect; No. 4 Chalmers, perfect; No. 5 Chalmers, perfect; No. 7 Maxwell, perfect; No. 8 Cartercar, perfect; No. 9 Cartercar, perfect; No. 10 Glide, perfect; No. 15 Cino, perfect; No. 14 Pennsylvania, perfect; No. 12 Ohio, perfect; No. 6 Cole, perfect; No. 11 Ohio, perfect.

In the contest among runabouts and toy tonneau cars for the Chicago trophy, the perfect scores included Moline 101, Lexington 103, Maxwell 107 and Lexington 110. Those to be penalized and the reasons therefor are: No. 100 Moline, 9 points for oiling spring shackles in the noon control, the driver and entrant confessing ignorance of the rule, which, in the mind of the referee, did not excuse the penalty. No. 102 Moline was given a per-



MCNAMARA IN No. 2 PREMIER

of 162 miles selected for today's route. Today's course lay between Sheffield, Ala., and Memphis, Tenn., and long ago, when the present route was outlined, it was understood that this link of the complete chain would be but a mere connector and of no practical value, so far as its increasing the possibilities of selling cars in the immediate territory. Today's route from Sheffield to Corinth, the noon control 62 miles out, offered the worst possible roads imaginable. They were not roads but the merest trails along the sides of the hills covered with underbrush or across bog holes in the swamps. Over such an impossible course the cars traveled on 18 and 20-mile-an-hour schedules. The referee had intended to reduce the pace along the route, but the car which was to lie by the wayside and inform those in the rear became incapacitated early in the tour and was not on the job to convey the desired message to the contestants. As a result eleven contesting cars were late at Corinth, leaving only four that checked in there on time, these four being No. 1 Premier, No. 5 Chalmers, No. 9 Parry, No. 7 Maxwell. The others were late from 1 hour to over 2 hours, due directly to the execrable conditions of the roads. In some places these roads led for nearly 100 yards over a bog in which five cars were seen stalled at the same time; a mile further on the road would lead through a field of stumps which were high enough to

## In the Glidden Tour Through Dixie

trip was to Columbia, 40 miles out, where the noon stop was made. This part of the run was a boulevard trip for all, over an excellent Tennessee pike that lay ribbon-like up and down the hillsides. On either side of the road were large plantations, with their stately homes flanged on all sides by majestic trees and spacious lawns that embrace acres in their extent. The second half of the run from Columbia to Sheffield presented a series of creeks that had to be forded, the biggest being Buffalo creek, located in the midst of a big forest. The actual fording of the creeks offered little difficulty to the cars, as the bottoms were hard and the water not deep enough to reach the magnetos or car-

fect score; No. 105 Parry was assessed 12 points for fastening up a muffler. No. 106 Falcar was perfect; No. 108 Cartercar received 2 points for a temporary repair of the clutch pedal and, No. 111 Westcott received 2 points for working on a loose seat. These are only the technical penalties, it being impossible to give all of the time penalties for lateness, if any occurred, because of the drivers' cards being left with a car that had broken down.

#### From Sheffield to Memphis

Memphis, Tenn., June 17—Never before since the name of Charles J. Glidden has been associated with motoring in America has so strenuous a trip been strewn with confetti for the contending cars than that

TABLE SHOWING EQUIPMENT AND PENALIZATIONS OF CHICAGO TROPHY CARS

No.	Car	Driver	No. Car	Bore	Stroke	Carbureter	Tires	Magneto	1st day	2d day	3d day	4th day	5th day	6th day	7th day	8th day	9th day	Total to date
100	Moline .....	Van Dervoort.	4	4	6	Schebler	Goodrich	Splitdorf	0	0	9	0	0	0	0	0	0	.....
101	Moline .....	Wicke.....	4	4	6	Schebler	Goodrich	Splitdorf	0	0	0	8	14	0	192	0	3	.....
102	Moline .....	Salisbury.....	4	4	6	Schebler	Goodrich	Splitdorf	0	0	0	0	0	0	3	6	3	.....
103	Lexington ..	Moore .....	4	4 1/4	5	Schebler	Goodrich	Bosch	60	0	0	2	0	20	842	0	.....	.....
104	Cole.....	Martin.....	4	4	4	Schebler	Diamond	Splitdorf	3	0	0	0	0	With drawn	.....	.....	.....	.....
105	Parry.....	Neff.....	4	4 1/4	4 1/4	Schebler	Diamond	Kurtz	0	4	With drawn	.....	.....	.....	.....	.....	.....	.....
106	Falcar .....	Van Sicklen ..	4	4 1/4	5 1/4	Excelsior	Diamond	Bosch	0	0	0	0	0	0	0	0	.....	.....
107	Maxwell.....	Illingsworth..	4	4 1/4	4 1/4	Maxwell	Ajax	Splitdorf	0	0	0	0	0	0	11	12	.....	.....
108	Cartercar ..	Landsheft....	4	4	4	Brush	Goodrich	Splitdorf	0	0	2	143	405	Not reported	.....	.....	.....	.....
109	Cartercar ..	Pendleton ....	2	5 1/4	4 1/4	Schebler	Goodyear	None	46	0	104	0	With drawn	.....	.....	.....	.....	.....
110	Lexington...	Hays.....	4	4 1/4	5	Schebler	Goodrich	Bosch	4	0	0	0	0	With drawn	.....	.....	.....	.....
111	Westcott....	Bevington ....	4	4 1/4	5	Schebler	Diamond	Remy	6	2	0	0	0	With drawn	.....	.....	.....	.....

pull the mufflers off cars, bend the radius and torsion rods and generally disrupt the mud aprons and under parts of the car; in a third place the path would lie up a steep hillside literally covered with rough stones and as soon as the top was reached a steep descent would be encountered. This condition lasted for over 50 miles and literally took the heart and patience out of the car crews. Once, however, that Corinth was passed a better situation presented itself. Leaving Corinth the cars passed over the Mississippi valley bottom lands which, in wet seasons, are all under water. Over these bottom lands the roadbed is frequently nothing but heavy planks lying crosswise of the road, and giving a corduroy effect. For stretches these plank roadbeds are raised in the form of bridges and you no sooner drop off one than you start upon another, keeping a snail's pace all the time. This road condition was disheartening and the heat of the day, added to the generally unsatisfactory conditions, weighed heavily on the minds of the contestants and chiefly upon the drivers. Once over the bottom lands a variable condition of rough dirt roads was encountered, which made speed impossible. This did not offer serious distress, because all of the contestants knew that for 30 miles into Memphis one of the finest boulevards would greet them and an opportunity offered of making up lost time, which proved to be the case.

As a direct result of the heavy roads the scores today were unpleasantly large and non-contesting cars suffered alike with the contesting machines. One of the Cadillac gun cars ran over a rough turn in the woods and broke the rear axle at the edge of the right brake drum. It is being substituted by a new axle from Memphis and the car soon will be back with the leaders.

Among the Glidden contestants No. 2 Premier received 121 points for late arrival at control and 4 points for adjusting the igniters in its make-and-break system of ignition. No. 3 Chalmers received, all told, 162 technical penalties for such work as tightening terminals, putting on a new water-line gasket, work on the steering gear, using a new spark plug and other minor difficulties. No. 4 Chalmers, driven by J. Matson, received 89 technical points for losing its muffler and trying to replace it, and other car work. No. 6 Cole lost 3 points in adjusting brakes, No. 10 had 29 points for lateness. No. 11 Ohio lost 11 points on technical matters and 54 on time. No. 14 Pennsylvania six was withdrawn during the day and received its total of 1,000 points for this withdrawal, but previous thereto had been charged with 338 points on technical matters, including work on the muffler, straightening a steering arm, adding a new muffler pipe and performing other minor work. No. 15 Cino was 54 minutes late at the noon control, exclusive of the 3-minute time allowance.

In the Chicago trophy division every car contesting received a penalty for being

late and three of them received technical penalties. No. 100 Moline was given 3 points for lateness, but had a clean technical score. No. 101 Moline received 6 points for filling the radiator outside of controls and 44 points for being late. No. 102 Moline was clean technically, but was taxed 39 on lateness. No. 103 Lexington was given 2 points for tightening a steering arm and 222 for lateness. No. 104

to date. No report has been bulletined as yet on No. 109 Cartercar.

Tonight, when the contesting cars all arrived at Memphis, the drivers were used up, some of them immediately going to bed without supper and sleeping through until the next morning. To add to this physical exhaustion was the terrible heat of the day and the impossibility of getting fresh water in any parts of the run



BIG GLIDE STRIKES WET GOING NEAR PIKE'S PEAK, KY.

Cole was withdrawn for having burned out a crankshaft bearing, caused by the oil pipe breaking when crossing the bottom lands. No. 106 Falcar was clean, but Driver Van Sicklen lost 83 points on time. No. 111 Westcott was also clean technically, but received 142 points for lateness at controls today.

after the thermos bottle supply had been exhausted by the thirsty tourists.

#### From Memphis to Little Rock

Little Rock, Ark., June 18—Today's run from Memphis, Tenn., here, practically 210 miles, has been the longest run so far of this tour and has been a notable one in that although the cars checked out of



WESTCOTT ON ROAD BETWEEN SHEFFIELD AND MEMPHIS

This practically concludes the tribulation story of the day, which unquestionably is the heaviest one so far in any tour. The Lexington 110 was withdrawn during the day because of breaking a steering arm and not having the necessary spare parts on hand. No. 108 Cartercar was levied against to the extent of 143 points for repairing a clutch pedal, working on distance rods, and repairing the radiator support parts. Its time penalties are not known

Memphis this morning at 7 o'clock, it was midnight before many reached the Marion house here tonight, making in all 17 hours on the road. This was due to two ferries that had to be crossed by all of the tourists, the first being at Helena over the Mississippi, and the second at Clarendon over the White river. Helena is 63 miles from Memphis and in order to get the cars across the river the Helena motorists secured a huge lumber barge, on



which all of the cars were loaded at one time and then were towed across the stream to Helena. At the loading point the cars were run onto the barge on their own power and those to arrive first waited until all of the cars that were running had arrived, which meant a wait of more than an hour for some of the leaders. When the Glidden tour float got into midstream a meeting was called on

of the cars unmercifully in their effort to make a 20-mile schedule and as a result some of the cars suffered more or less penalty. The country passed through constitutes some of the Mississippi bottom lands and is entirely populated by negroes who cultivate cotton.

The second stage today was a 52-mile run west from the Mississippi to Clarendon on the White river, through a monotonous

a forest, through which they were run for 10 miles to the village of Roe, where they were checked at 6 o'clock for the 90-mile run to Little Rock. The river trip was a rest for everybody and a most unusual chapter in Glidden tour history. The part of the river traveled embraced the now famous White river pearl fishery section, from which some famous pearls have recently been gathered.

Out of Roe the third, last and most pleasant phase of the day's running began. For the first time the roads were in a straight direction, running north and south and east and west. Often as far as the eye could see it was one continuous lane, with wire fences on either side. The country is perfectly flat—a vast ocean of agriculture. Nearing Stuttgart the rice territory established 4 years ago was entered. This industry is making fortunes for those in the vicinity who have taken up the enterprise. On either side of the road the fields were flooded with water that appeared to be some 6 inches deep and above the surface of the water the heads of the rice plant were seen. The fields are divided into perhaps forty smaller fields or sections by high ridges of land with sluice gates in them, so that the water for flooding can be led from one to another of the divisions as needed. The value of the rice industry to this section is well shown in the Stuttgart situation, where, in a city of 3,000 people, there are two large garages and big motor cars as well as small machines. The direct results of the industry extend beyond the confines of the town in the broad, straight gumbo roads that extend east and west and north and south from the center of the town. Leaving Stuttgart the same type of flat country was encountered until within 25 miles of Little Rock, when rolling territory was invaded. This run was made after sundown by all of the tourists, the acetylene headlights and oil side lamps being soon flickering all over the country as the night slowly moved along. This was the first occasion in a Glidden tour in which a night run has been indulged in, the schedule for the occasion being 13 and 15 miles per hour, which was easily maintained. The confetti work was specially well done and none experienced the slightest trouble in following the course in the light of the moon and the head lamps.

Although today's run, from a schedule point of view, was the easiest so far in the tour, four or more cars were penalized. No. 2 Premier, driven by Ballinger, had to solder its gasoline tank, which was pierced the previous day by a stone hitting the only unprotected part of it. One man worked 31 minutes and another man 45 minutes on the job so that 76 points were piled against the car. Besides this it was 21 minutes late at Clarendon control and lost 3 points for taking on extra gasoline at Helena, giving the total for the day at 118 points.

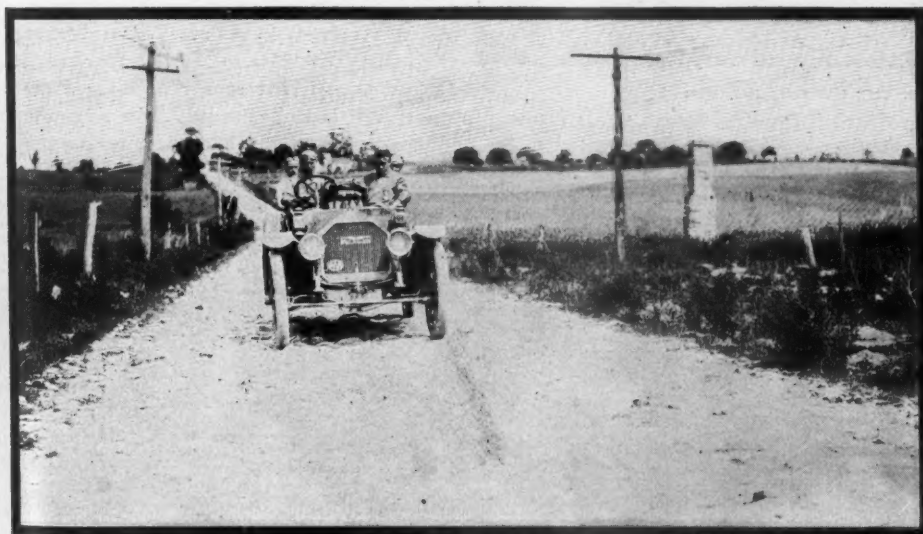
No. 9 Parry had its misfortunes. The



NO. 110 LEXINGTON RUNNING OUTSIDE OF CORINTH, MISS.

deck, Chairman Butler issuing final instructions on the modus operandi of the checking system at the ferry. A long wait was necessitated at the landing at Helena because a large steamer was unloading at the regular dock where the cars were to be run off. As a result an improvised runway off the side of the barge to the land level

flat country with little else than comfortable negro shanties along the roadside. This stretch of country is as flat as a table and is used largely in the cultivation of cotton and corn. The road was one of the easiest on cars since the start of the tour, the surface and bed being a sandy clay composition that filled the complete coun-



GREAT WESTERN PRESS CAR ENCOUNTERS ROUGH ROADS

had to be brought into use and down this the cars snailed one at a time.

The 63 miles from Memphis to Helena were novel in that the route lies for miles along the base of the levee used for preventing the Mississippi overflowing its banks. The levee is a flat-topped embankment looking for the world like an unfinished right of way for a railroad. The road along this levee was execrable, being very lumpy and hard. This shook many

tryside and seemed to ascend to the clouds after each car passed. Happily the schedule was so easily maintained that there was little rivalry among the cars and the leader was allowed to retain his position unmolested.

At Clarendon the ferry facilities comprised two barges lashed side by side. Instead of simply carrying the cars across the river a 10-mile trip down stream was made and the cars landed in the midst of



NO. 108 CARTERCAR BETWEEN LOUISVILLE AND BOWLING GREEN, KY.



CLEAN-SCORE NO. 5 CHALMERS IN THE CYPRESS SWAMPS

muffler was almost torn off and 4 minutes were needed to complete the job. A fan belt was replaced and 6 more points added for tightening a front wheel and tie rod bolts. The total penalty was 20 points. No. 11 had 114 points levied against it, caused by taking off and repairing the radiator, and after doing this once having to do it a second time. Hand in hand with the radiator difficulties was that of taking on water and oil.

In the Chicago trophy field Moline No. 101 lost 14 points for putting water in the radiator three times outside of controls, adding oil once and tightening a spark plug. No. 108 Cartercar received, all told, 405 points, made up as follows: 393 for replacing a broken spring and the remainder for taking on gasoline, oil and water outside of controls. This car broke its spring when 10 miles out of Memphis. The small Cartercar, the two-cylinder type, was withdrawn yesterday at Burnsville, the reason advanced being the too stiff schedule over the rough Mississippi and Tennessee roads. The Cole touring car No. 6 was withdrawn today, due to breaking of the rear axle within 15 miles of

Memphis. Almost at the same point the Westcott press car broke its rear axle, but will join the tour in a day or so and continue until the end of the trip.

The numerous troubles of today have

been expected, because of the terrific rough usage the cars have been subjected to during the last 2 or 3 days. In spite of these penalties the run, because of its diversity of attraction, will remain longer in the minds of the tourists than any other day in the 15 running days.

#### Hot Springs to Little Rock

Hot Springs, Ark., June 19.—Today's run of 53 miles from Little Rock occupies a unique place in a national tour, in that it is the first time in which a Sunday has been used for a run. The original intention was to spend today resting in Little Rock, but the 191-mile trip to Texarkana over rough roads was too severe a test in view of the gruelling trials the cars already have received, and it was decided to take the 53-mile run here today and at the same time give the boys a chance to use the hot baths in this town.

Today's start was scheduled for 9:30 o'clock and promptly on time Starter Ferguson had the contestants away over the rough road to Hot Springs. When the final reckoning was made this afternoon it was found several of the cars had received penalties, one of the most serious being No. 103 Lexington, which struck a very bad soft spot in the road and broke the right side member of the frame just back of the front axle. Driver Moore at once signed his observer's card, withdrawing from the contest, but later today reconsidered his course and will continue, getting a repair effected tomorrow morning before the start for Texarkana.

The Glidden ranks suffered a couple of penalties today, one being No. 15 Cino, which received 16 points for tightening the hub flange bolts in the left rear wheel. It is expected that sooner or later a new wheel will have to be used, the numerous sharp turns and rough roads working special havoc on the road wheels. No. 8 Cartercar suffered 28 points on work tightening spring clips and 13 more for late arrival. No. 11 Ohio suffered 18 points for



RAPID TRUCK NEGOTIATES SWAMPS NEAR BURNSVILLE, ALA.



taking on water, due to a leaky radiator, and also 18 points for lateness. Of the new cars in the tour few have been looked on with keener interest than the Ohio and its radiator troubles have specially handicapped the work of the car. As on previous days Ray MacNamara had No. 1 six-cylinder Premier, the first car in, closely followed by others in the clean-score brigade, including No. 7 Maxwell, driven by H. E. Walls and the Chalmers 30, piloted by Bolger, these being the only three cars at present running with perfect scores.

The roads today were in unpleasant contrast with those of yesterday. The snaky hills and streams to be forded made the 20 and 18-mile paces good stiff trials on the cars. No. 108 Cartercar fell out with a broken rear axle when a little over 10 miles out of Little Rock, and the other Cartercar, No. 8 in the Glidden, was late, due to helping the disabled car out of its dilemma.

The weather today was as hot, if not hotter, than yesterday and sorely taxed many of the drivers and mechanics, who were worn out after their long ride of yesterday when they reached their end of the trip at 11 o'clock. Leading out of Little Rock the course was over a new convict road being built out of the famous redlands of this section. The roadway, when completed, will be 50 feet wide and offers excellent touring scope. This extends but 10 miles and immediately it is left behind the cars plunged into tortuous mountain paths over the foothills of the Ozarks. At the foot of each hill a clear stream had to be forded and on many of the inclines it was with difficulty that the cars were kept from striking against stumps.

All along the course the Sunday crowds were on hand at every cross road, the children to cheer and work themselves into a frenzy as each car approached and the older folks quite contented with a wave of the hand and a courteous bow.



NO. 15 CINO'S EXPERIENCES IN CYPRESS SWAMP



HALLADAY PRESS CAR CARRYING MOTOR AGE REPRESENTATIVE

This afternoon, starting at 4 o'clock, the tourists were taken by the civic organizations of Hot Springs for a car trip over the surrounding Ozark ranges, after which was a Dutch luncheon and other en-

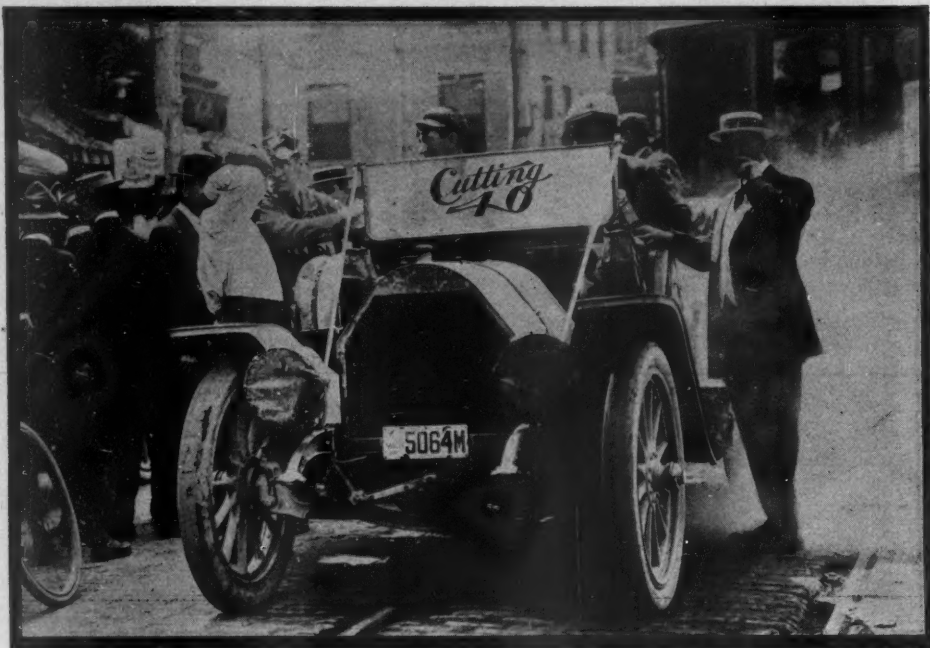
tertainment. Many of the tourists were too fagged out to enjoy the outing and spent the afternoon sleeping.

#### Hot Springs to Texarkana

Texarkana, Ark., June 20—Special telegram—Today's run of 138 miles from Hot Springs to here has resulted in eliminating two of the three remaining perfect scores, so that tonight there is but one car running with a perfect road score to date. That car is the No. 5 Chalmers, driven by W. Bolger. The two other perfect scores to pass out of existence today were No. 1, Premier, driven by Ray MacNamara, and No. 7, Maxwell, driven by H. E. Walls. The Premier six had to adjust and repair a fan belt in addition to taking on water three times outside of controls, receiving all told 7 points, 3 each for taking on water and the 1 for the fan belt. The Maxwell trouble consisted in breaking a spring clip on a front spring. The clip was a special one used in attaching the shock absorber and had a horizontal base on which the shock absorber hinged. It was not this boss that broke off but the leg of the clip which carries the integral boss. At first it appeared as if no penalty



ALL HAPPY ON MAXWELL OUTSIDE OF LOUISVILLE



ONE OF THE TWO CUTTING PRESS CARS ON THE TOUR

would be charged on the ground that the shock absorber can be repaired free of charge. On an examination of the car it was shown that it was the clip part and not the shock-absorber part that was broken, and as an ordinary spring clip was used in the repair it was decided to charge for the new clip, making a 6-point penalty on the car. Last year at the completion of the 2,670 miles there were five cars that checked into Kansas with perfect scores, but this year it will be impossible for more than one to claim that distinction. In comparing the five of last year with the possible one of this season it must be borne in mind that in no previous national tour have the cars ever been put over the execrable roads that they have had to negotiate this season.

But the Premier and Maxwell were not the only ones to have points charged against them today. No. 2, Premier, received 10 points made up with 4 for tightening the fan belt and 4 for taking on water twice outside of controls. No. 4, Chalmers, driven by Matson, received 9 points for taking on water three times outside of controls. No. 8, Cartercar, received today all told 575 technical points for straightening a front axle which was sprung on the run from Little Rock to Hot Springs and for putting on new rear wheels.

No. 9, Parry, was checked up tonight with 8 points, made up of 5 for tightening a steering gear and 3 for taking on water. No. 11, Ohio, was withdrawn, the card turned in by the observer stating that the frame was fractured and a cylinder cracked. No. 15, Cino, was debited 45 points all for repairing a rear wheel, the spokes of which were loose at the hub flange. This left four perfect scores, mechanically considered, these being Nos. 3 and 4, Chalmers, driven by Gardham and Matson, respectively, as well as No. 5,

Chalmers, driven by Bolger, and No. 10, Glide, driven by F. Castle. But these are only the technical points and to these time penalties must in five cases be added as follows: No. 2, Premier, 4 points; No. 8, Cartercar, 319 points. In the contest for the Chicago trophy, donated by the Chicago Motor Club, only two made perfect scores, these being No. 100, Moline, driven by C. H. Vandervoort, and No. 106, Falcarr, driven by C. F. Van Sicklen, but unfortunately Van Sicklen was penalized 16 points for being late at control, so that the Moline was the only perfect score today in that division.

The others suffered a variety of penalties. No. 101 Moline was assessed 192 points for soldering a crack in the base part of the radiator, No. 102 received 3 points for taking on water outside controls, No. 103 Lexington, which was reported as withdrawn yesterday, reconsidered the withdrawal and repaired the broken side member of the frame at a blacksmith shop in Hot Springs and re-

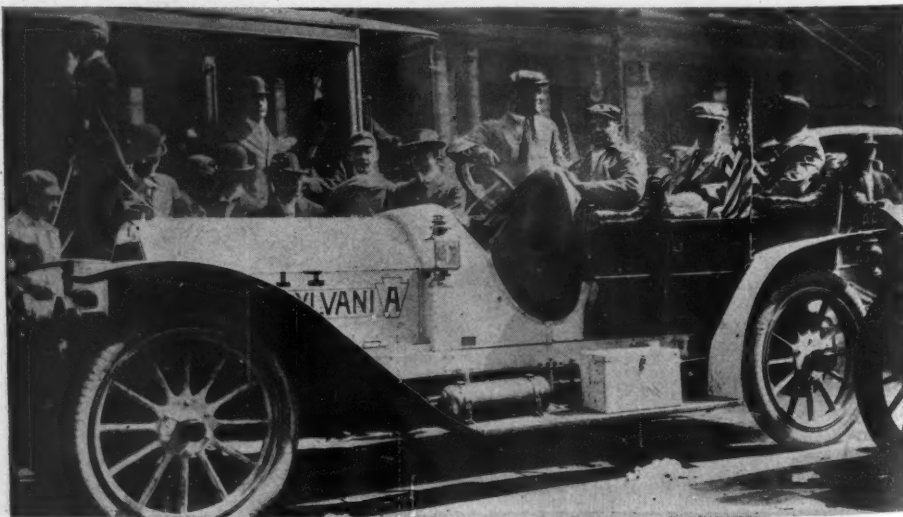
ceived therefor 842 points. The car will continue as a contestant. No. 111 Westcott was withdrawn.

#### From Texarkana to Dallas

Dallas, Texas, June 21—Special telegram—With the end of today's tour a new record has been established in a Glidden tour field by the fact that the total distance of 217 miles traveled today exceeds by 5 miles the length of the longest previous day's run of any national tour. Today's run has been particularly epoch-making, in that it recorded the invasion of Texas, if the expression might be used. This morning immediately after checking out at Texarkana, we entered Texas; in fact, to be accurate, the cars were parked in Texarkana on the dividing line between Arkansas and Texas, so that the two right wheels rested on Texas soil and the two left wheels on Arkansas soil.

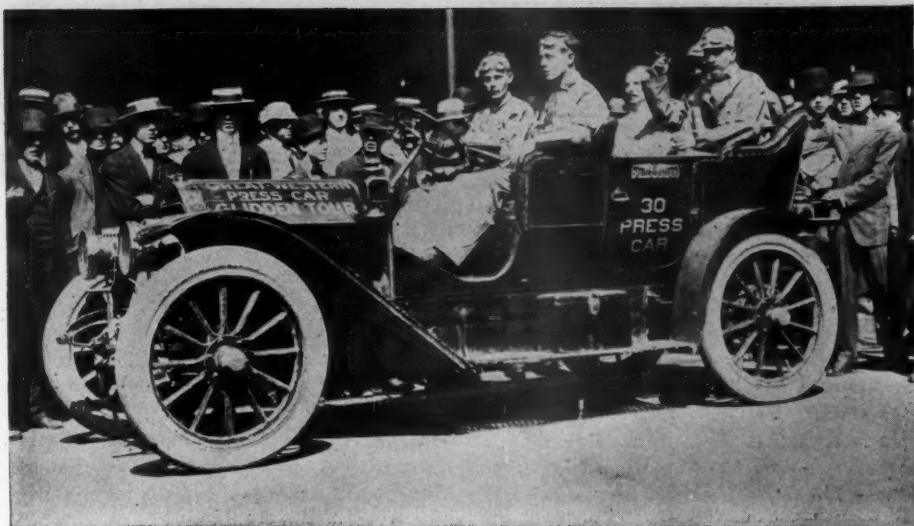
Today's invasion of Texas has been a most remarkable one because of the spontaneous enthusiasm shown on every hand. There were places along the route where for over half a mile at a time the roadside was lined with spectators the same as if they were watching a road race among motor cars. In towns and cities the population was electrified every time a car passed. In the quieter farming sections the farmers had wrapped up a dozen plums or peaches in bags and the farmers themselves tossed these into the cars as they passed. This suggested the reception at Hope, Ark., yesterday, when one large peach grower presented each contestant with a big basket of ripe peaches.

The exact significance of the invasion of Texas by the motor car cannot be grasped except by seeing the land yourself. Those who last year had their first introduction to the great west on the Glidden run to Denver and back will recall the almost inexhaustible wealth of the farming sections and the great number of motor cars owned by the farmers. What is true of Minnesota and Iowa in this respect is true in Texas, which is some day destined to be a greater agricultural factor in this union than any other state. The two Texas



PENNSYLVANIA, ONE OF THE TWO SIX-CYLINDERS IN THE BATTLE





GREAT WESTERN AND ITS LOAD OF NEWSPAPER MEN

staples are corn and cotton, and today the tourists saw fields of growing cotton scarcely 6 inches high, reaching as far as the eye could see and where nature had placed her only boundary, namely, the meeting point of earth and sky. But not alone cotton, but the growing corn is an equally great industry, and is cultivated generally throughout the state. The countryside in Texas, in many of the best sections, is as pretty as any that can be seen west of the Mississippi, no matter what state it may be in. Because of this premier agricultural position Texas offers, and because it is absorbing a great number of cars this year, the tourists have in no little degree looked upon Dallas, and with it Texas, as the objective point of the tour, and it is regrettable that a day is not being spent here to allow the boys to rest up and enter into the spirit of the great agricultural south as evidenced in and around Dallas.

Dallas has within the last year nearly doubled the number of cars owned within her gates, and the motor fever has taken strong hold of all the people. It is because of this that Dallas was included in this year's itinerary, and the regret is that more Texas towns and cities were not included.

So far the fact that certain cars were penalized today has been quite overlooked in the general enthusiasm that a visit through agricultural Texas in a motor car is sure to create. To be optimistic, eight of the sixteen contesting cars which set out this morning from Texarkana finished with perfect scores, these eight being: In the Glidden division—No. 1 Premier, No. 2 Premier, No. 5 Chalmers, No. 8 Cartercar and No. 10 Glide; in the Chicago trophy division—No. 100 Moline, No. 101 Moline and No. 103 Lexington. This is a good, high average for perfect scores with the tour so far as the number of days is concerned, being half over. It also is a good average when it is remembered that some of the heaviest sand experienced anywhere on the Glidden tours of the last four sea-

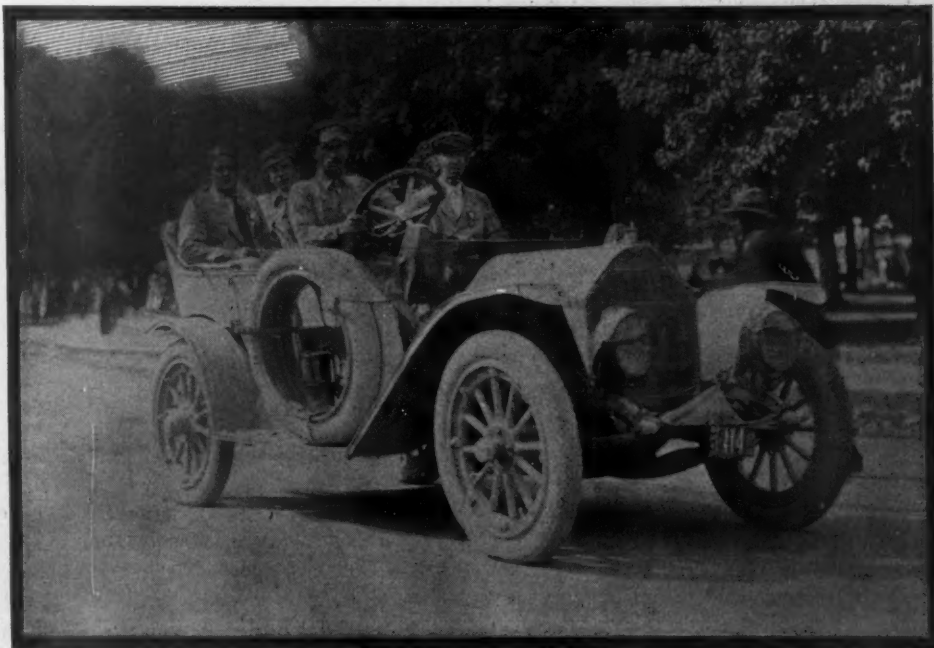
sons was encountered in stretches from 5 to 10 miles in length.

To the cars that received penalties it must be said, in all fairness, that it was not so much the trials of going through the sand today that worked their downfall as it was the racking they received on two of the days' runs last week. No. 3 Chalmers, Gardham driving, received a total for the day of 18 points, 15 being for repairing an oiler pipe and 3 points for taking on oil outside of regular oiling stations. No. 4 Chalmers, driven by Matson, had 6 points for taking on water outside of the controls. No. 7 Maxwell was penalized 4 points for four times when he adjusted the oiler by using his foot to do the work. No. 15 Cino broke its rear axle and as the observer has not as yet reported, it is impossible to say what plans may be made. No. 102 Moline received 6 points for twice taking on water, and No. 107 for repairing a broken fan belt. Up to nearly midnight No. 106 Falcar, driven by

Van Sicklen, had not checked in, but was near Honey Grove with a cracked rear axle housing tube. The Dallas agent was wired and had a new one on the way out, and it is expected the car will be in long before morning. No report has been received today from No. 9 Perry, which was seen late in the afternoon within 50 miles of Dallas.

The first press car along the route today was the Halladay, which followed the tour in, halted at each control and was met on the outskirts of Dallas and escorted to the headquarters at the Oriental hotel. The Great Western press car arrived later in the evening. Neither of the Cutting press cars had reported by sundown, both being delayed at Texarkana, one due to breaking of a part in the differential and the other to breaking a spring. The Westcott press car, which broke its rear axle between Memphis and Helena, will join the tour at Oklahoma this week and continue to the end. The two Cadillac gun cars are coming right along with the tourists, and the Rapid truck, although not seen by the Motor Age representative today, was passed on yesterday's run. The truck checks out in the early hours, generally between 2 or 3 o'clock.

It was announced tonight that two protests have been filed today relative to penalties imposed yesterday. One was filed by H. O. Smith against penalizing No. 1 Premier for taking on water, on the grounds that the running card given the driver showed one schedule for the day's trip, whereas a different one was shown on the official bulletin. The other protest is from the Maxwell representative, Mortimer Reeves, who protested against penalizing the Maxwell No. 7 for points on replacing a spring clip, which clip also serves as a shock absorber. It is understood that both protests will be considered tomorrow by the referee.



OHIO CHECKING IN AT BOWLING GREEN NOON CONTROL



Published Weekly  
**2-CLASS JOURNAL COMPANY**  
 1200 Michigan Avenue  
**CHICAGO**  
 New York Office, 239 West 39th Street

**MOTOR AGE**

Subscription Rates  
 United States and Mexico,  
 per year, \$3.00  
 Other countries including  
 Canada, \$5.00

Entered as Second-Class Matter September 19, 1899 at the  
 Postoffice at Chicago, Illinois, under Act of March 3, 1879

## The Motor Trinity—Tags, Signs and Roads

**A**N American now on the other side of the Atlantic has had an opportunity to see for himself just how well the new international agreement as regards tags works out. He has registered his car in Great Britain, and by simply carrying on the rear a black plate bearing the two letters G. B. he is enabled to travel through France, Germany, Belgium, Italy, Monaco, Roumania, Serbia, Austria, Hungary, Bulgaria, Spain, Greece, Montenegro, Portugal and Russia without having to go through all the red tape that formerly prevailed. That little tag is the open sesame to sixteen European countries and marks a reform that eventually is bound to include the whole world. It is a sensible idea, well-conceived and well-carried out, and the chief regret is that the United States has not been convinced as yet of the benefits to be derived through the exercise of such international courtesy. Uncle Sam usually is abreast of the time, if not ahead of it in most cases, but here is an instance where he has fallen down lamentably. He had a chance to draw cards in this international game, but he preferred to stand pat because of the many different angles brought up by the state's rights outcry that went forth when the federal registration bill was sprung in this country. Now that Europe is succeeding so well with this new scheme, maybe your Uncle Samuel wishes he had gotten into the game when he had a chance.

**A**S the European scheme is working now there has no obstacle arisen and so far no one has made any protest whatsoever as to the violation of any rights of the different nations. So carefully has the scheme been evolved that the new regulations have not in any way affected the various questions of formalities. This has been provided for in protected countries so that while the international tag carries the car through, the usual deposit is made or else the car goes through by the use of a triptyque, which does away with all formality of having the driver examined and changing the tag at every frontier station.

**A**LL this, of course, simply leads up to the old proposition in this country—that of federal registration. Not until your Uncle Samuel can see the wisdom of this course can he get into the international agreement, for the foreigner will object strenuously to granting tourists immunity in Europe and then when he himself comes to this country have to take out tags in those states which do not believe in reciprocity. When this country wakes up and tells its motoring citizens that they can travel from the Atlantic to the Pacific protected by a federal license tag, then the good people at Washington can ask to be let into the international conclave. This concession alone should be one of the strongest arguments why the United States government should listen to the appeals of the American Automobile Association and enact the federal registration law.

**W**HEN you come to think of it, this is not a very great concession to ask of the government. Nearly every state in the union which has a motor registration law is broad-minded enough to recognize the beauties of reciprocity, and there are only two or three states which make it compulsory for a visitor to pay his good money simply for the privilege of passing through the commonwealth. Therefore, why wouldn't it be a simple mat-

ter for the government to whip the few obstructionists into line and then put into force the federal registration law? This done, then go to those sixteen countries in Europe and tell them that the United States of America is ready to extend the courtesies of its highways to the foreigner in exchange for similar privileges for its citizens abroad, and not make Americans desirous of seeing the beauties of Europe be forced to seek protection by carrying tags of countries other than their own in order to get privileges which should be theirs without the asking.

**I**T has been argued by some of the few who are against the federal registration bill that such a measure would force an issue which heretofore has reposed safely on the table; that if there was a federal law those states now embraced in the reciprocity zone would insist upon their rights and compel visiting motorists to carry the federal tag, whereas now state tags do the same work. This, however, is not enough of an objection to cause the bill to be sidetracked. It is a detail that could be worked out to a successful conclusion by the law-makers of this country.

**H**AND in hand with the tag question goes the signboard, the motorists' compass, which makes it easy for tourists to run around the country without losing time and bothering the inhabitants by stopping to ask the road directions. It must be admitted though that in this department the reformers are far in advance of the taggers. Gradually this broad country of ours is being signboarded in a systematic manner. Clubs have been the early missionaries and it is the force of their example that has whipped others into line. One of the latest recruits is a large tire manufacturing concern which already has done considerable work and whose plans include the whole country. The A. A. A. also has been prominent in this campaign, and it will not be long before the government will be forced to surrender and to take this department under its protecting wing and see that the signboards become a national institution. Of course it is more than possible that Uncle Sam would bump into that states' rights stonewall to a certain extent, but even if he could not bring this about himself he would have enough influence with the various states to induce them to pass laws that would compel the various towns to put up signs for the guidance of tourists and to see that they stay up after they are once erected.

**R**EGISTRATION tags and signboards naturally lead up to that one great need—good roads—and when this trinity has been brought about then, indeed, the motorists' lot will be a happy one. By that time the legislators all will become motorists and through the goggles of the motorist they will see things in a different light than they do now. They will recognize that the driver of a motor car is not a criminal; that he has some regards for the rights of others; that there is no need to enact rigid laws as to the speed to be maintained; that speed traps are a disgrace to the community; that other users of the highway should be under the same careful supervision as are the motorists, and that, after all, the motorist is an American and a citizen of the republic, just as are the pedestrians and the people who make use of horse-driven vehicles.



# INTERNATIONAL TAG TOURISTS' PASSPORT

**T**HERE is no need to obtain a fresh driving car license for every European country it is desired to visit. Slow, old-fashioned Europe has decided that all necessary safeguards can be taken by instituting one international license good for almost every country on this side of the Atlantic. It remains for the United States of America to insist that there shall be as many licenses as there are states.

The new arrangement, which is the outcome of an international conference held in Paris last year, provides for an international pass for both car and driver. The initial formalities are simple: Suppose the motorist lands in Liverpool, he has his car examined by the local agent of the Motor Union, the Automobile Association, or the Royal Automobile Club. If it meets with the international requirements—and all modern cars do meet with these requirements—the owner is given a certificate stating his name and address, home registration number of the car, a description of the car, maker's name, type of chassis and motor, the style of body and the weight in kilogrammes. If the car is registered in the United States, and carries an American number, the owner must place at the rear, above his home number, a black plate bearing the two letters U. S. If the car has been bought on landing in England, and is registered in that country, it must carry G. B., if France is its country of origin and registration, it will carry the letter F.

Thus equipped, the car can be driven in sixteen countries: France, Germany, Belgium, Italy, Monaco, Roumania, Servia, Austria, Hungary, Bulgaria, Spain, Greece, Montenegro, Portugal, and Russia, without any registration formalities whatever. In the same way the driver can undergo a practical examination and be provided with a license which will allow him to drive his car in all of the above countries for a period of 12 months without any formalities. It is not necessary that a landing should be made in England in order to obtain this pass. If the motorist disembarks at Havre the French Service des Mines will issue the necessary passes; if it is Italy or Germany the authorities charged with the supervision of motor cars will grant the passes.

One of the first Americans to make use of this improved system was S. Krausz, who is now on an extensive tour through Europe in the interests of the Overland Co. Mr. Krausz says "I landed at Liverpool with a new car without registration numbers. It was examined by the Automobile Association official and granted an interna-



June 28-29-30—Three-day reliability run of St. Louis Automobile Manufacturers and Dealers' Association for Star trophy.

July 1-2-4—Speedway meet at Indianapolis. July 1-10—Road carnival of licensed dealers at Los Angeles, Cal.

July 2—Reliability run of North Wildwood Automobile Club, Philadelphia.

July 4—Track meet of Motor Club of Wildwood, N. J.

July 4—Track meet of Dallas Automobile Club, Dallas, Tex.

July 4—Track meet of Cheyenne Motor Club, Cheyenne, Wyo.

July 4—Hill-climb of Automobile Club of Auburn, Auburn, N. Y.

July 4—Track meet of Minnesota State Automobile Association, St. Paul.

July 11—Hill-climb of Plainfield Automobile Club, Plainfield, N. J.

July—Hill-climb at Richfield Springs, N. Y.; middle of month.

July 18-23—Milwaukee Sentinel trophy. Tour of Wisconsin State Automobile Association.

July 22-27—Second annual endurance run of Minnesota State Automobile Association. December 1-8—First annual aeronautical exhibition, Chicago Coliseum.

July 28-29—Third annual interclub reliability team match between Chicago Automobile Club and Chicago Athletic Association.

July 30—Track meet of North Wildwood Automobile Club, Wildwood, N. J.

August 1—Reliability run of Minneapolis Automobile Club, Minneapolis, Minn.

August 1-September 15—French Industrial vehicle trials.

August 4—Annual hill-climb of Chicago Motor Club at Algonquin, Ill.

August 15—Start of Munsey tour.

August 17—Track meet at Cheyenne, Wyo.

August 31—Reliability run of Minnesota State Automobile Association.

September 2-3-5—Speedway meet at Indianapolis.

September 3—Reliability run of North Wildwood Automobile Club, Wildwood, N. J.

September 5—Track meet at Wildwood, N. J.

September 5—Track meet at Cheyenne, Wyo.

September 5—Speedway meet at Los Angeles, Cal.

September 5—Road race of Denver Motor Club, Denver, Colo.

September 5-10—Track meet at state fair, Minneapolis, Minn.

September 7-9—Four-day reliability run of Automobile Club of Buffalo.

September 9-10—Track meet at Providence, R. I.

September 10—Automobile Club of San Francisco road race, Golden Gate park.

tional pass. At the same time it was registered with a Liverpool number, and the driver secured an international driving license. In addition to the registration number I had to fix at the rear an oval plate with the letters G. B., denoting the country in which the car was registered. On landing in France there were no formalities whatever in connection with car and driving licenses, and as no objection has been made to the lack of a French registration number, it is evident that the authorities here are already familiar with the new system. Owing to a slight accident in Paris I had to appear before the police, when the inspector declared that the regulations were not yet in force. On looking up his official papers, however, he immediately discovered that he had made a mistake. I intend to travel in practically every country in Europe, and shall thus have an opportunity of appreciating the simplification made possible by the new international licenses."

Naturally the new regulations do not in any way change the various custom formalities. In all protected countries it will be necessary to make the usual deposit on the car, or enter by the use of a triptyque. Nor are the new licenses obligatory. If it is desired to go through the old formality of declaring the car, having the driver examined and changing the license tags at every frontier station, motorists are at perfect liberty to do so. American motorists already possessing the French car and driving license, and intending to tour in this country only, have nothing to gain by applying for the international certificate, for the former are good for all time. As most Americans tour in three or four countries whenever they come to Europe it is safe to declare that practically all of them will take advantage of this reform.

The only regrettable feature is that the United States has not thought fit to enter into this agreement. This would have made it possible for intending visitors to Europe to secure the international passes and affix the international license tag before leaving home. But if this were done, America would be under the obligation of allowing the Englishman, the Frenchman and the German to tour from New York to San Francisco with his home number and an international pass, while the native would have to comply with the motor law of the different states he traverses. The object lesson is obvious and should be taken home by those Americans who have not as yet been aroused to the need of such a law. It would be of great benefit to the United States to be in this great international body.



INTERNATIONAL SIGN ON AN OVERLAND

## Motor Cars in Detroit Exposition

**D**ETROIT, Mich., June 21—When President Taft at Washington pressed the button which opened the Detroit industrial exposition, he opened the best summer show ever held, and from the motor standpoint, the first show at which at least half of the cars shown are models of the following year. The exposition is held in the old Wayne pavilion, made over and enlarged for this purpose and splendidly decorated for the occasion.

For the opening the heat kept the crowd down to respectable proportions, but at that the attendance was estimated at over 12,000 from the opening hour, 7 o'clock, to the closing. The big show will be open from now on until July 6, inclusive, and is intended to show to the world at large, and to Detroit people in particular, what a great manufacturing town this really is. If the variety and wide scope of the exhibits are any criterion, its success is already assured and from the attendance the people are supporting it in a proper manner.

The motor car parts are not set aside in any one place, but are scattered around the whole building wherever space could be obtained, but the manufacturers of pleasure cars, commercial wagons and electric cars are given the whole of the basement. In this the space is divided into several very large and spacious central exhibits, and many more smaller wall spaces ranged around them. The central spaces are but four in number, of which the Packard Motor Car Co., the E-M-F Co., the Cadillac Motor Car Co. and the Chalmers Motor Co. had possession.

By far the most striking exhibit in the hall is that of the Packard company, occupying the exact center of it. This is of the form of a raised dais, with the edges sloping upward to the top. The whole sloping sides and top are carpeted with purple plush and enclosed with ropes of purple, stretched between short brass posts. On the top, in the exact center of the space, is placed a 1911 model Packard touring car, done in some dark color, but with light running gear and trimmings. The whole effect is striking.

The exhibit of the Cadillac Motor Car Co. is decidedly different also. In this space are shown several models of the Cadillac cars, while around in the corners are placed a number of boards upon which are shop exhibits, consisting of various parts, machined, partly machined and in the rough. With these are descriptions showing the unusual accuracy with which the parts are machined and finished ready for use, the micrometers and similar fine measuring instruments being shown, so that visitors need not take anyone's word for the measurements, but could measure the parts themselves. While not striking nor so impressive as some others, this exhibit is far more convincing than any of the

others, and the logic back of it is better.

The Chalmers space is well arranged with several 1911 models and a chassis, sectioned to show construction, and in motion to show the operation.

Modern tendencies toward the handling of all goods by truck and delivery wagon is well shown by the exhibit of commercial wagons. In this class there are four exhibits, all of Detroit-made cars, namely: Grabowsky Power Wagon Co., Stuart Commercial Car Co., Beyster-Detroit Motor Car Co. and American Motor Truck Co. The first named shows three of the Grabowsky wagons, of which there are many now in use in the city, one of these being partly cut open to show the mechanism and fine points of the same. The Stuart company, a newcomer, shows a single vehicle of 2 tons capacity. This chassis carries a four-cylinder four-cycle engine of 4½-inch bore and 5-inch stroke, rated at 30 horsepower. Drive is through shaft and planetary transmission to jackshaft, from which double chains drive the rear wheels. The wheelbase is 106 inches, tread standard, and wheels are 34 inches in diameter, with 4½-inch solid tires. This concern, which has a large factory at Junction avenue and the Wabash railroad, is making a strong bid for business with a well-designed car, of which the engines and all castings, as well as all machine work, are made or done in the company's own factories.

The Beyster-Detroit Co. shows two cars, one a chassis and the other with a delivery wagon body. The American company has one vehicle, one of the company's four-wheel drive trucks of 3 tons capacity with a stake body.

Detroit electrics represent the field of electric vehicles, the Anderson Carriage Co. showing two well selected cars, one with enough of the body removed to show the batteries, these being the Edison new lead-cell. Car manufacturers who exhibited were as follows:

Brush Runabout Co., Brush; Cadillac Motor Car Co., Cadillac; Carhartt Automobile Corporation, Carhartt; Chalmers Motor Co., Chalmers; Everitt-Metzger-Flanders Co., E-M-F; Flanders 20; Ford Motor Co., Ford; Hudson Motor Car Co., Hudson; Hupp Motor Car Co., Hupp; Metzger Motor Car Co., Everitt 30; Packard Motor Car Co., Packard; Paige-Detroit Motor Car Co., Paige-Detroit; Regal Motor Car Co., Regal; Warren Motor Co., Warren-Detroit; Anderson Carriage Co., Detroit electric; American Motor Truck Co., American truck; Beyster-Detroit Motor Car Co., Beyster-Detroit delivery wagon; Grabowsky Power Wagon Co., Grabowsky trucks; Stuart Commercial Car Co., Stuart trucks.

The accessory makers were:

Aluminum Castings Co., Anderson Forge and Machine Co., American Lubricator Co., American Motor Castings Co., American Motor Washer Co., Auto Marine Appliance Co., Auto Parts Mfg. Co., Briscoe Mfg. Co., Corcoran-Detroit Lamp Co., Detroit Carburetor Co., Detroit Lubricator Co., Detroit Motor Castings Co., Detroit Radiator Co., Detroit Roller Bearing Co., Detroit Screw Works, Detroit Steel Products Co., Detroit Steering Wheel and Windshield Co., Diamond Mfg. Co., Dodge Brothers, Edmunds & Jones Mfg. Co., Fisher Body Co., Gemmer Mfg. Co., Gray Motor Co., Griswold Motor and Body Co., Hall Lamp Co., Hayes Mfg. Co., Hydraulic Oil Storage Co., Kelsey-Herbert Co., Kelsey Wheel Co., McCord Mfg. Co., Michigan Lubricator Co., Seltz Auto & Transmission Co., Russell Motor Axle Co., Timken-Detroit Axle Co., C. R. Wilson Body Co.

### RACING AT POINT BREEZE

Philadelphia, Pa., June 20—Rain put a stop to the fourth annual summer race meet of the Quaker City Motor Club at Point Breeze track Saturday afternoon. E. R. Bergdoll in a Benz and Ralph de Palma in a Fiat were having a battle royal for the honors in the 50-mile race, with the latter about 10 seconds in the lead, and the field strung along for miles behind, when the storm, which had been threatening for half an hour, came down upon the track. It wasn't an ordinary rainstorm; it was a cloudburst, with hail on the side, and in a minute the red flag was wig-wagging the contestants to shelter. Thirty miles had been covered when the race was stopped, and as de Palma had a 50-yard advantage over Bergdoll when the race was called off, the officials awarded him first money.

When the storm loomed up in the west there still were two events to run off—the 25-mile and the 50-mile. It was decided to start the latter, as the field was rather large; it was the big race of the day and it was thought that there would be sufficient



MUNSEY TOUR PATHFINDERS ABOUT TO START FROM PHILADELPHIA



time to finish it. Two Klines, a Buick, a Chalmers and a Jackson were the other starters. The 25-mile event was not run because of the weather.

Bergdoll was the star of the meet. The local millionaire brewer had his Benz going fine and he easily annexed the 5 and 10-mile events for amateurs, besides finishing second in the 50-mile free-for-all. Scoot Miller won one of the 5-mile events for smaller cars in his Warren-Detroit, the other going to the Otto, driven by G. Jones, which ran well.

The times were slow throughout, the only record broken being the track figures for 5 miles, de Palma clipping 13% seconds off the previous best of 5:14%. One event which proved amusing, even if not exciting, was the mile nearest-to-3-minutes race. There were thirty entries, and the contest resembled a funeral procession—and an exceedingly slow one at that. Gordon Dyer in the Selden was the best guesser of the bunch, landing his car under the wire in 3:00%.

A pursuit race with four entries was won by Burns' Autocar, after which came the big race—and the deluge, with the record crowd of 15,000 scampering like mad for shelter. Summaries:

#### FIVE MILES, AMATEUR, DIVISION 1-C

Car	Driver	Time
1—Benz	E. R. Bergdoll...	6.01%
2—Alco	W. C. Longstreth	
3—Klinekar	Harvey Ringler..	

#### FIVE MILES, DIVISION 2-C

1—Warren-Detroit	Scott Miller....	6.55
2—Schacht	James H. Gray..	
3—Black Crow	James Baird....	

#### FIVE MILES, DIVISION 3-C

1—Otto	George Jones....	6.04
2—Mercer	W. Oliver .....	
3—Pullman	J. Adeo .....	

#### TEN MILES, AMATEUR, DIVISION 4-C

1—Benz	E. R. Bergdoll...11.42%
2—Buick	Bardsley .....
3—Chalmers	Richards .....

#### ONE MILE, FREE-FOR-ALL, NEAREST 3 MIN.

1—Selden	Gordon Dyer....	3.00%
2—Alco	W. C. Longstreth	

#### FIFTY MILES, FREE-FOR-ALL\*

1—Flat	Ralph de Palma.39.59
2—Benz	E. R. Bergdoll...

#### TRIAL FOR FIVE-MILE TRACK RECORD

1—Flat	Ralph de Palma. 5.13
2—Former record.....	5.14%

\*Race stopped at completion of 30 miles

## Zengel and Chadwick Hill Stars

BALTIMORE, Md., June 19—The big event in the Baltimore hill-climb—the free-for-all—was carried off with flying colors by the big 90-horsepower Chadwick, entered by the Chadwick Engineering Works and driven by Len Zengel. The ascent was made in the remarkable time of :36 flat for .6 mile, breaking last year's record of :43%. It is the opinion of motorists that this performance will stand unequalled for some time to come. For taking the honors in the feature event the Chadwick gets the handsomest of the silver cups offered by the Automobile Club of Maryland, under whose auspices the climb was held.

There were two prizes offered in this event, the other one being for the four-cylinder car that made the best showing in the contest. This prize was captured by the 60-horsepower Stearns, entered by Joel G. Nassauer, chairman of the committee which had the contest in hand, and driven by Clarence L. Hahn. This car negotiated the distance in :49%. It must be understood that this car did not finish second, but it received the prize under the conditions of the event, which were made so as to give the amateur performers a chance to shine as well as the big fellows. The second car in the event was the 50-horsepower Matheson, entered by the Matheson Motor Car Co. and driven by J. A. Turner. The time was :44. Third was another Chadwick of 60-horsepower, which completed the ascent in :46. This entry was that of W. W. Lanahan and driven by Wilfrid Smith.

The climb began promptly at 2 o'clock yesterday afternoon. They were held on the Belvedere hill, from Falls avenue to Roland avenue, the grade of which is 15 per cent. With the exception of a rough starting place, the hill was in excellent condition. The mud on Belvedere avenue, just west of the Falls road, was very heavy because of the continued rainy

weather, and it was necessary to lay a large quantity of cinders. This held the cars back to some extent. The course was lined with about 3,000 people. Just thirty-seven of the original forty-four entries took part in the climb, while there was also a motor cycle contest in which thirteen of the little machines participated.

There were nine other classes besides the free-for-all and the motor cycle event. The time made by the winning cars in these events was considered very creditable. In addition to capturing the amateur prize in the free-for-all contest, the 60-horsepower Stearns, entered by Joel G. Nassauer, also won two other events, the class G for cars selling for \$4,001 and over and class K for amateur drivers only in cars selling for \$3,001 and over. In the former event the car was driven by Clarence L. Hahn and the ascent was made in :50%, while in the amateur event Mr. Nassauer drove his car up the hill in :51%. The summaries:

#### CLASS A, \$800 AND UNDER

Car	Driver	Time
Hupmobile	T. Wilson Simpson...	1:21½
Hupmobile	Nat Tuttle.....	1:43½
Hupmobile	Talbott D. Smith....	2:01½

#### CLASS B, \$801 TO \$1,200

Oakland	Howard Bauer.....	1:01
Warren-Detroit	Harry Reis .....	1:06½
Ford	A. Maurice Eastwick..	1:08½
Hudson	E. F. Coley.....	1:17

#### CLASS B, \$1,201 TO \$1,600

Buick	G. B. Hall.....	:57½
E-M-F	M. C. Jones.....	1:05½
Crawford	A. A. Miller.....	1:07
Paterson	Edward C. Blauvac....	1:17
Reo	T. B. Bohannen.....	1:42

#### CLASS D, \$1,601 TO \$2,000

Buick	Charles Jenkins .....	:56
Oakland	Howard Bauer .....	:56½
Buick	George Jenkins.....	1:02
Kisselkar	Robert M. Stein.....	1:21
Washington	Frank Coaler .....	1:22

#### CLASS E, \$2,001 TO \$3,000

Matheson	Edgar F. Dobson.....	:49½
Chalmers	Joseph F. Janin.....	:58%
Oldsmobile		
Special	C. R. Melsner.....	1:13%

#### CLASS F, \$3,001 TO \$4,000

Matheson	Guy Reynolds.....	:47
Knox	John Goodwin .....	:58%

## MUNSEY PATHFINDERS BUSY

Boston, Mass., June 21.—After a rousing send-off in Philadelphia, with the best wishes of Mayor Reyburn, the pathfinders who are laying out the route for the Munsey historic tour are now covering the tentative route in an E-M-F car. Tom Skeggs is the pilot, and the other members of the party are Harry Ward and F. J. Byrne, of the Munsey newspapers, and E. J. Lynch, representing Lazarnick, the photographer. The pathfinders have laid out the route for the first 3 days of the tour. The first day's run will be from Philadelphia to West Point, a distance of 160 miles, with a noon stop in Morristown. The second day will lead the Munseyites from West Point to Waterbury, Conn., with an intermediate stop in Lenox. Waterbury to Boston, with a noon stop at New London, will be the third day's run. The distance to be covered the second day is 170 miles, while the run into Boston is 194 miles by the odometer.



MAYOR REYBURN OF PHILADELPHIA STARTS MUNSEY SCOUTS

**D**ETROIT, MICH., June 20.—Not alone were two new car companies formed in the past week in Detroit, but several accessories closely allied with it will be produced by newly-formed concerns, while a large number of older firms are going to do a great amount of building, the details of which were announced last week.

The two new concerns are the Hupp-Yeates Electric Car Co., incorporated at Lansing with \$100,000 capital to build a new type of electric car. The stockholders are R. C. Hupp and L. G. Hupp, of the present Hupp Motor Car Co., building the Hupmobile, also R. T. Yeates. At the same time another company, the Hupp-Ellis-Rutley Co., was formed, this being a building concern which will immediately start the work of erecting a suitable building for the electric car company. The capital of the building concern is set at \$25,000, with the following stockholders: R. C. Hupp, L. G. Hupp, P. D. Ellis and W. J. Rutley. The car to be built is said to be a new type of electric, but whether for pleasure or commercial use cannot be found out. That the two concerns mean business is best shown by their advertisements in the Monday morning's papers for carpenters and laborers at the site of the plant, Lyncaster avenue, two blocks from Jefferson avenue, near the Detroit Terminal railroad, and close to the Chalmers, Hudson, Anderson Forge, Fairview Foundry, and Dodge Brothers group of plants at Fairview. These two companies are the last two of a group of Hupp factory units. The others are the Hupp Motor Car Co., just mentioned; the Hupp-James Halloran Foundry Co., iron foundry; the Hupp-Turner Co., machine shop, and the Hupp-Johnson Co., drop forgings.

#### Hupp Is Spreading Out

The second factory will be located in the same general neighborhood, being just across Jefferson avenue from the present Hupp Motor Car Co.'s plant. This building at the corner of Bellevue street, is for Hugo Scherer and F. E. Wadsworth, who have formed a new company to build a low-priced car. These men are of the Michigan Steel Boat Co., and the new factory, work on which was started Monday morning, is just across the street from their present location. The firm, as yet unnamed, will have a capital of \$250,000, and the car to be put out, also without a name as yet, will be a small one of more than 20 horsepower, about 100-inch wheelbase, to weigh less than 1,900 pounds and in runabout and toy tonneau bodies, to sell at a low price.

The building site was known as the old Hopson property, and the two old structures on it will be razed at once to make room for the modern three-story plant, 191 feet long on Jefferson avenue, with two wings each 228 feet long extending away from the street at the back. Both front and wings are to be 64 feet wide, giving

the whole building a floor space of 125,568 square feet.

Other new companies formed were the Aluminum Solder Co. with \$200,000 capital, the Dominion Stamping Co., of Walkerville, with \$100,000 capital, a large company at Alpena to make cars. The week also saw the first car of the year's output from the University Motor Car Co., another newcomer. The Aluminum company has a new process of uniting aluminum without riveting, and has commenced the erection of a factory at Leib street. Herman B. Strate, superintendent at the Buhl Malleable Co., is president; J. M. Trudell, the inventor, vice-president, and J. J. Jerome, secretary and treasurer.

The stamping company while located across the river, has mostly Detroit capital in it, and the product will be mostly sold in Detroit. A large tract of land has been purchased in Walkerville and a substantial brick building will be erected. The Detroit men in it are: Henry P. Coppe; John H. French, George S. French, Fred J. Armstrong, Peter B. Luyster, Milton T. Watson, Robert Houghton and Walter F. Tant.

The University Motor Car Co. has finished the first car and this will be used for the Exalted Ruler of the Elks during their carnival here next month. This new car is called the Varsity, while the special one just finished is in royal purple with white running gear and trimming. The company is composed entirely of Detroit men, with a capital of \$100,000, and much of next year's output is already contracted for. The car is a small four-cylinder.

Buildings, permanent structures, costing much money, show plainer than anything else how permanent and lasting the industry is. So, every record of a new building of any size going up is a mute record of the permanency of the motor business. On this assumption, the business is going to last forever, for of the total building in Detroit authorized last week, namely \$650,000, no less than 56.5 per cent, or \$365,500 was in or of the motor business. Of this, the E-M-F Co. has \$125,000 for the addition to the Piquette street building and \$20,000 for the addition to the Jefferson avenue building; the Packard company has three buildings of \$30,000, \$30,000 and \$50,000 valuation, respectively; the new Anderson Forge Co.'s buildings amounted to \$73,000, and others totaled \$37,500 more.

#### Metzger Company's Plans

These buildings, too, are all structures which have been mentioned previously, and the list does not include the many and very large ones announced during the week. Thus, the Metzger Motor Car Co. has announced the purchase of a large tract of land in a new and hitherto unbroken section of the city, the northwestern part, close to Highland park, where the Ford

building is located. Here the Metzger company has purchased 2,056 feet along the Belt Line railroad, extending from Hamilton boulevard back to Twelfth street. On this tract of 40 acres, a number of buildings will be erected, all of the one-story high, saw-tooth roof, long, narrow type. The first of these will be started in a few weeks, just after the first of August, this being a structure 1,200 feet long by 65 feet wide. This will be built in three sections, the first being finished and occupied while the others are building. In this way, occupancy of the buildings will be had sooner than otherwise. This first building is for the truck works, now incorporated under the name of the Metzger Motor Car Co., of New York, with a capital of \$1,000,000. The trucks will be built in large numbers for 1911, Mr. Everitt expressing the company's plans as for 1,000 trucks, all of large size, 5-ton, 7-ton and 10-ton. The Metzger pleasure-car plant is located at the Grand Trunk railroad and Milwaukee avenue, but even now, the company is finding this too small, so that as soon as the truck building is built another just like it will be started alongside of it, for the pleasure-car plant, which will then be moved out there from Milwaukee Junction.

Speaking of the proposed plant, President Everitt said: "In addition to the truck plant, and later on, the pleasure car building, we will establish a drop-forging plant and a foundry, so that we will make all of our own parts for both pleasure cars and commercial cars."

#### Sale Attracts Attention

This sale has attracted attention to the large vacant tracts in the same section, relative to which the owner, Robert Oakman, says that he has under consideration several deals, one of them with a bigger concern than the Metzger. As anticipatory of just this action, the street car service is even now being improved in this part of the city. At present the D. U. R. is building a line due west from its new car barns and shops opposite the Ford Motor Co. This line begins south of the Belt Line and runs to Oakman avenue, which is two-thirds of the way between Hamilton and Twelfth. It is carried out to the south so as to make convenient city connections. From Woodward back to the Metzger property, the land is owned by the street railroad, and it is stated that not only will the repair shops be moved there but the company will build and erect a shop to build their own cars, employing thousands of men.

Ground was broken last week for the new factory of the United States Motor Co., at Oakland and McLean streets, Highland park. At Woodward avenue and Charlotte, the work of razing the old building to make room for the new division headquarters building is progressing rap-



## Stoddard Deal Formally Ratified

idly. The barn has been torn down, while the roof and third story have also vanished. This week will see the finish of the old home.

At the Clark street plant of the Timken Detroit Axle Co. the work of building the new additions is nearly finished. This consists of a third floor increase in space, besides a three-story building along the railroad.

### ST. LOUIS' FIRST BIG TEST

St. Louis, Mo., June 20—With the entries for the 3 days' reliability run for the St. Louis Star trophy closing Thursday night, everything is completed for the first real test of the motor car ever given in St. Louis. This contest, which is under the auspices of the St. Louis Manufacturers' and Dealers' Association, is the first endurance run of more than 1 day ever arranged in this city. At this date it appears that not more than thirty cars will start. Dealers declare the selling season has opened so strenuously that it is practically impossible for them to get as many cars in the contest as had been hoped for at first. Two weeks ago it was believed that at least sixty cars would be entered. In addition to the contesting cars there will be the Buick pathfinder as pilot, two press cars and a car for officials, besides various other non-contesting cars. The distance of the route as officially laid out and measured is 418.4 miles. The first day's run to Hannibal will be 148.1 miles from St. Louis, the starting point. The second day's run from Hannibal to Mexico, Mo., will be 143.3 miles, and the third from Mexico to St. Louis, the finish, 127 miles. The contest committee plans to issue certificates to any non-contestants whose cars may make perfect scores. The contest for the Star trophy, however, is open only to entries made by St. Louis manufacturers and dealers.

### MATHESON PROTESTS KNOX

Wilkes-Barre, Pa., June 18—A. R. Pardington, of New York, who officiated as referee at the hill climbing contest of the Wilkes-Barre Automobile Club here last Tuesday, has notified the president, J. H. Perkins, that the Matheson Automobile Co. has protested against the Knox runabout, which, with Fred Belcher driving, won the \$1,000 Hollenback trophy. The protest is on the ground that the Knox car was not strictly in the runabout class as defined by the rules covering the event. Mr. Pardington has not allowed the protest, and the Matheson people have now 3 days to take an appeal. Meanwhile the awarding of the trophy is withheld, as the Matheson car took second place and would get the trophy were the protest sustained.

NEW YORK, June 18—At a meeting of the stockholders of the United States Motor Co., official announcement was made by President Benjamin Briscoe that the Dayton Motor Car Co., of Dayton, O., maker of the Stoddard-Dayton, the Courier Car Co., of Dayton, O., maker of the Courier car, and the Providence Engineering Works, of Providence, R. I., had been taken into the big selling organization. The United States Motor Co. now controls the Maxwell-Briscoe Motor Co., the Columbia Motor Car Co., the Brush Runabout Co., the Alden Sampson Mfg. Co., the Dayton Motor Car Co., the Courier Car Co., the Briscoe Mfg. Co., the Gray Motor Co., and the Providence Engineering Works. The stockholders authorized an increase in the capital stock from \$16,000,000 to \$30,000,000, divided equally between common and preferred stock. The primary object of this increase was to provide for the taking over of the Dayton Motor Car Co., the Courier Car Co., and the Providence Engineering Works. In addition to this a sufficient amount of stock is left to provide for additional working capacity if needed or for any other extensions that may be desirable. It is considered, however, that with the present roster of affiliated companies no further extensions are now contemplated by the United States Motor Co.

### CHICAGO SHOW PLANS

New York, June 18—So far as manufacturers of pleasure vehicles are concerned there will be no important change in the old plans for the Chicago show. The show will, as heretofore, be open to all manufacturers, subject to the rule which gives members of the N. A. A. M., Inc., first choice of space. Commercial vehicles will be given the right of way during the second week, but an effort will be made to provide space for any manufacturers of pleasure cars who may be unable to exhibit during the first week. The first week's show will open on January 28 and close February 4. The second week will commence February 6 and end February 11. The old rule, which prevents admission to the Chicago show of any manufacturer who participates in any unsanctioned show will continue in force. The application blanks will be issued about the first week in September.

### FIGHTING EXTORTION

Boston, Mass., June 20—The Automobile Legal Association of this city has inaugurated a campaign whereby it proposes to call a halt on hotels and garages where motorists are charged more than ordinary guests while making tours, instances having come to it of members paying more because they were using motor cars than they had at other times. Circulars have

been sent out to all the members asking for confidential information of their experiences, and as their names never will be drawn into any controversy it is expected that much valuable data will be received. One question asks if any garage has overcharged the motorists, and when and where, while another asks regarding hotels. The blanks are so arranged that the members may give the route and in this way other members will be notified what hotels and garages to avoid. It is expected that when the plan is worked out there will be a change of front among some hotel men who have regarded motorists as their legitimate prey. As the A. L. A. has more than 3,000 members, it expects to get a good line on places that habitually overcharge Bay State motorists.

### REGISTRATION THIS YEAR

Detroit, Mich., June 20—Some idea of the business may be had, particularly of its present status, from the figures just made public in this city by C. J. Kendall, commercial agent for the Santa Fe railroad. Mr. Kendall has been looking into the matter of motor cars and motor car shipments, and on June 1 wrote to the secretaries of the various states asking the number of cars registered. The replies indicated the following totals of licenses issued from January 1 to about June 3: New York, 105,400; California, 35,000; Pennsylvania, 26,000; Illinois, 28,004; Ohio, 25,790; Massachusetts, 23,400; New Jersey, 21,761; Indiana, 20,300; Iowa, 17,817; Michigan, 14,074; Wisconsin, 12,767; Maryland, 10,367; Missouri, 10,200; Minnesota, 9,100; Oregon, 3,907; Utah, 1,130; Colorado, no registration; southern states, no registration. Totals, 364,707, exclusive of states where there is no registration.

### BALTIMORE'S ORPHAN'S DAY

Baltimore, Md., June 19—More than 700 orphans of this city had a gala day last Wednesday when they went on their annual motor car outing to the Green Spring Valley and returned, a distance of over 30 miles. The outing this year was not given under the auspices of the Automobile Club of Maryland, but was due to the generosity of the Baltimore News. The run lasted for 3 hours and upon their return the children were a tired but happy lot. The start was made from in front of the Zell Motor Car Co., Mount Royal avenue, between Charles and St. Paul streets. Mayor Mahool was the guest of honor. The cars were bedecked with flags.

### INTER-STATE IN A. L. A. M.

New York, June 20—Announcement is made that the Inter-State Automobile Co., of Muncie, Ind., has been granted a license under the Selden patent. Thomas F. Hart is president and general manager of the company. The other officers are J. M. Maring, vice-president, and Otto Holdren, secretary-treasurer.

## Jersey Test Run During Hail Storm

NEW YORK, June 18—Under extraordinary conditions of road and weather, nineteen out of the total list of thirty-four starters in the annual endurance run of the New Jersey Automobile and Motor Club finished the full course today. The distance was 290.6 miles; twice around a measured course of 145.3 miles. In perfect weather the run would have proved difficult enough on account of its unusual length and stiff hills, but after a long series of rain-storms which rendered the crowned roads perilous in places and the hills well nigh unnegotiable, a cloudburst, tornado and a pelting hail-storm added just the touch necessary to make the trip answer to General Sherman's definition of war.

The blow fell during the first half of the second round when most of the cars were in the vicinity of Green Pond mountain, as difficult a bit of hill-climbing as there is in this part of the country. Suddenly the black clouds emptied themselves and thousands of tons of icy pellets, propelled on the wings of a 60-mile wind, whistled about the heads of the contestants like the projectiles from a battery of machine guns. Some of the cars had succumbed during the first round, but it was the hail that caused the vast bulk of the trouble. It put out a whole platoon of motor cars and left them standing at various points in the hills, while their crews sought shelter in the mud and water under the cars.

Eleven cars completed the run under these conditions with perfect scores and checked in on the minute in the presence of a vast crowd that lined the last mile of the course and surrounded the club house in Newark. There would have been one more clean score if a series of street cars had not blocked Buick car No. 17 about 200 yards from the finishing line, as the car was only 1 minute 52 seconds late. The higher class runabouts made the best showing with four perfect scores and only two absentees at the finish.

There was a large amount of tire trouble all along the route and the tremendous grades and the mud brought on considerable carburetor difficulty and heating of the motors. But it was the hail that dealt the heaviest blows, as a half-dozen drivers and observers were practically knocked out by the impact of the ice bullets.

The course was from the Newark headquarters of the club, north to Newfoundland, west to Hackettstown, south to Flemington and east to Newark. The start was at 5 o'clock in the morning and the finish at 8 o'clock at night. It was scheduled originally to be held June 11, but on account of unfavorable weather conditions it was postponed until June 18. The starting, observing, scoring and checking were done in businesslike shape by the club officials.

There was no technical examination of the cars after the finish, as under the conditions of the test the awards were made upon the showing of the cars on the road.

The observers were drawn largely from the ranks of college students, but as the penalized cars did not finish in considerable numbers, their work was not heavy. The New Jersey laws prohibiting the use of chains on some of the roads while allowing them on other parts of the course, puzzled some of the drivers and injected an element of uncertainty in attempts to pass some of the cars on steep grades. The Simplex tore down a section of fence on the first round, but neither car nor crew suffered injury. Aside from that, accidents were rare.

The course did not pass by directly the new country headquarters of the club near Butler. Work is being pushed on the additions to the splendid buildings and by next Saturday it is believed that the place will be ready for occupancy.

### ATLANTA-NEW YORK WINNERS

New York, June 20—Charles Jerome Edwards, referee of the recent national good roads tour from Atlanta to New York has announced the winners in the various competing classes, as follows:

Division 1A, cars selling for \$800 and under—Hupmobile entered and driven by N. W. Wallace, Jr., Charlotte, N. C., 20 points penalty.

Division 2A, cars selling for \$801-\$1,200—Ford entered and driven by E. M. Willingham, Atlanta, Ga.; clean score.

Division 3A, cars selling for \$1,201-\$1,600—Cadillac entered and driven by D. K. McColl, Bennettsville, S. C., and Mitchell, entered by James A. Gray, Jr.; driven by R. Stowe, Winston-Salem, N. C., both with clean scores.

Division 4A, cars selling for \$1,601-\$2,000—Buick entered by W. E. Wimpy, driven by P. A. Parmalee, Atlanta, Ga., 108 points.

Division 5A, cars selling for \$2,001-\$3,000—Columbia, entered and driven by Marcellus Rambo, Birmingham, Ala., and Pullman entered and driven by Norman Gallatin, both with clean scores.

Division 6A, for cars selling \$3,001-\$4,000—

Pope-Hartford, entered by E. H. Inman, driven by A. L. Almand, Atlanta, Ga., clean score.  
Division 7A, cars selling from \$4,001 and up—Lozier, entered by Asa G. Chandler, Jr., driven by F. H. McGill, Jr., Atlanta, Ga., and Pope-Toledo, entered and driven by Edward M. Durant, Atlanta, Ga., both with clean scores.

### MONTAUK RUN RESULTS

New York, June 18—With sixteen clean scores out of an entry list of thirty-seven, the Montauk Light or Bust 2-day endurance run around Long Island of the Motor Contest Association was finished last Wednesday. The course aggregated 380 miles and nearly 50 miles of the first day's run was through Montauk Point badlands, as hard a bit of going as can be found in Long Island. Four out of the five Buicks that competed finished the run with perfect scores, while two Mitchells out of three avoided penalization. The run was accomplished under favorable conditions and was successful in every way. W. J. Morgan, who has retired as head of the association, will be succeeded by E. L. Ferguson. Summary:

#### DIVISION 1A, \$800 AND UNDER

No.	Car	Driver	Penalty
24	Hupmobile	Elmer D. Cutting	0
43	Hupmobile	R. E. Gillam	1,010

#### DIVISION 2A, \$801 TO \$1,200

20	Mitchell	D. M. Hasbrouck	0
32	Ford	W. B. Young	0
37	Buick	Charles Jones	0
31	Ford	McCormick	38

#### DIVISION 3A, \$1,201 TO \$1,600

19	Mitchell	Wm. Simonson	0
25	Chalmers	E. Miles Welch	118
44	Studebaker	E. A. Taylor	0
45	Staver	C. S. Cheney	0
11	Regal	George Ainslee	1,000

#### DIVISION 4A, \$1,601 TO \$2,000

36	Buick	Dr. Wm. H. Nafis	0
38	Buick	W. Davenport	0
39	Buick	Phil. Hines	0
40	Buick	Frank Remson	8
35	Westcott	Thomas Wilson	79
1	Pierce-Racine	W. A. Wells	1,000
2	Cadillac	L. R. Burne	1,000
16	Auburn	Herbert F. Earl	1,000
34	Elmore	J. L. Gwyer, Jr.	1,048

### TABLE OF RESULTS IN NEW JERSEY RELIABILITY RUN

TOURING CARS, UNDER \$1,600			
No.	Car	H. P.	Entrant
34	Cadillac	30	I. M. Upperco
20	E-M-F	30	G. F. Eveland
26	Mitchell	30	F. L. C. Martin
32	Regal	30	E. S. Hilton
TOURING CARS, \$1,600 AND OVER			
15	Franklin	28	E. D. Carlough
19	Buick	30	J. C. Bell
28	Buick	30	James W. Ward
17	Buick	30	J. C. Bell
9	American-Simplex	50	H. F. Selbert
36	Packard	30	A. Hollander
8	Auburn	32	J. J. Meyer
11	Haynes	30	E. H. Paddock
18	Buick	30	J. C. Bell
21	Fiat	25	Philip Hilton
25	Selden	35	P. L. Munford
38	Johnson	30	Carl F. Johnson
ROADSTERS, UNDER \$1,200			
24	Hudson	25	A. H. Humphreville
27	Hupmobile	20	F. L. C. Martin
29	Ford	20	L. J. Wyckoff
4	Maxwell	22	J. W. Mason
5	Maxwell	14	J. W. Mason
30	Hupmobile	20	F. L. C. Martin
31	Overland	25	W. F. Ackor
33	Hupmobile	20	F. L. C. Martin
ROADSTERS, \$1,200 AND OVER			
6	Maxwell	30	J. W. Mason
10	Haynes	40	W. E. Shuttleworth
22	Jackson	50	F. L. Kramer
23	Columbia	29	W. J. Tynan
14	Franklin	42	E. D. Carlough
35	Cadillac	30	I. M. Upperco
7	Overland	40	George L. Riess
8	Merced	30	R. A. Greene
37	Chalmers	30	Frank J. Radcl
39	Haynes	30	James D. Bourke



DIVISION 5A, \$2,001 TO \$3,000		
4	Haynes .....	W. E. Shuttleworth 0
18	Mitchell .....	O. R. DeLamater 9
5	Mercer .....	Joseph Trehou 1,000
12	Franklin .....	C. J. Hickman 1,000
27	Selden .....	Richard Carter 4

DIVISION 6A, \$3,001 TO \$4,000		
6	Palmer-Singer .....	Fred J. Titus 0
18	Franklin .....	Paul Harvey 0
17	Matheson .....	Nell Whalen 0
41	Welch-Detroit .....	C. V. Searing 0
29	Knox .....	H. K. Sutherland 15
3	Palmer-Singer .....	A. P. Palmer 129
28	Palmer-Singer .....	A. N. Henderson 180
42	C. G. V. ....	Arthur Coombs 356

DIVISION 7A—\$4,000 AND OVER		
30	Amplex .....	Harold W. Slop 0
8	Zust .....	V. P. Pisan 30
10	Amplex .....	Walter Jones 1,000
15	Flat .....	Peter Smith 1,000
25	American .....	Earle A. Cryne 1,034

CAUSES OF PENALIZATIONS  
Division 1A—Hupmobile, No. 43, for motor stop, 9 for replenishments, 1,000 for dropping out.

Division 2A—Ford, No. 31, 38 for replacing balls in bearing.

Division 3A—Chalmers, No. 25, 118 for stalled motor and time lost from car being stuck in the mud. Regal, No. 11, 1,000 for rear differential trouble, causing withdrawal.

Division 4A—Buick, No. 40, 8 points for lateness. Westcott, No. 35, 1 for motor stop, 78 for lateness. Pierce-Racine, No. 1, 1,000 for withdrawing on second day. Auburn, No. 16, 1,000 for withdrawing by reason of broken axle. Elmore, No. 34, 40 for gearbox adjustments, 2 for motor stops, 6 for replenishments and 1,000 for withdrawal.

Division 5A—Selden, No. 27, 1 for cut fan belt, 3 for taking on water, 4 for cleaning lubricator belt. Mercer, No. 5, 1,000 for failing to check in at noon control and withdrawing; continued as non-contestant. Franklin, No. 12, 1,000 for withdrawal due to magneto trouble.

Division 6A—Knox, No. 29, 15 for adjustments and replacing plugs. Palmer-Singer, No. 3, 6 for replenishments, 123 for lateness. Palmer-Singer, No. 28, 2 for stalling motor, 178 for lateness. C. G. V., No. 42, 1 for motor stop, 47 for engine repairs, 309 for lateness.

Division 7A—Zust, No. 8, 30 for removing carbon from igniters. Amplex, No. 10, 1,000 for failure to check in at first control. Flat, No. 15, 1,000 for withdrawal on account of accident. American, No. 25, 34 for replacing spark plugs, 1,000 for withdrawal on account of fire.

### JACKSONVILLE AWARDS

Savannah, Ga., June 20—At a meeting of the Jacksonville Automobile Club last evening the following cars were awarded prizes for having made the best run on the recent trip from Jacksonville to this city. Eleven cars had perfect scores, but the following three made the best run and time:

Class 1, cars costing from \$2,001 to \$3,000—M. D. Johnson, Oldsmobile 40.

Class 2, cars costing from \$1,251 to \$2,000—George F. Bensel, Cadillac 30.

Class 3, cars costing from \$851 to \$1,250—L. C. Oliver, Ford.

The other cars with perfect scores will each receive a medal.

### BOSTON STUNT FINISHED

Boston, Mass., June 20—The E-M-F 30, which has been making a reliability and durability test through the streets of Boston, was stopped at 11 this morning, just 2 weeks to the minute from the time Charles J. Glidden gave the crank a twirl in front of the state house. The test was ended because the drivers were worn out, having been in the car in shifts day and night in all sorts of weather. When the car stopped 3,382 miles had been covered. The gear shifts totaled 8,072, while the brakes had been applied 5,172 times. The clutch had been thrown 10,146 times. The test was a hard one because the car was driven where it found the heaviest traffic, necessitating the constant use of brakes, etc. It was estimated that it had been used as hard as if it had done 20,000 miles on the highways.

## Park Road Race for San Francisco

SAN FRANCISCO, CAL., June 30—Special telegram—The Automobile Club of California intends to make the coming road race, which is to be held September 10, in Golden Gate park, in this city, a big success, which is shown by the early appointment of a committee to handle the affair. Not only have members of the committee been selected, but a great many details for the race already have been attended to. The men who will handle the race are Percy J. Walker, William H. Metson, George T. Cameron, Arthur B. Watson, Max L. Rosenfeld, G. A. Boyer and E. P. Brinegar, all prominent business men of San Francisco. This committee has decided the affair shall be called the Golden Gate park road race. The course selected for the race starts on Sloat boulevard going west on the boulevard to Ocean highway, then north along the beach to the South avenue entrance to Golden Gate park, following the south and middle drives through the park to Nineteenth avenue, then along Nineteenth avenue to Sloat boulevard. Practically the same conditions will govern the coming race as were in use at the Portola road race. The same number of events will be run with the same classifications for the contesting cars. These include a big-car and a little-car race and a free-for-all, the three being run at once. With the appointment of the general committee and the decision of the committee on the course, and length and number of races, the work of promoting the big event is well started.

### CLIMB AT OSSINING

Ossining, N. Y., June 18—A heavy rain-storm stopped the hill-climb of the Upper Westchester Automobile Club today, leaving two events undecided. The best time of the day was made by Disbrow in a Knox, who covered the .7 mile of the hill, which has an average grade of 11 per cent, in :57.33. Summaries:

\$1,200 AND UNDER		
Car	Driver	Time
Buick .....	Jones .....	1:33.57
\$1,200 TO \$1,600		
Correja .....	Taylor .....	1:11.79
Buick .....	Jones .....	1:12.93
Maxwell .....	See .....	1:32.45
300-600 CUBIC INCHES DISPLACEMENT		
Knox .....	Disbrow .....	:57.33
National .....	Kincade .....	1:00.81
Berkshire .....	Clapp .....	1:06.68
UNDER 300 CUBIC INCHES DISPLACEMENT		
Pope-Hartford .....	Flincke .....	1:01.19
Pope-Hartford .....	Holt .....	1:05.16
S. P. O. ....	Horton .....	1:06.8

### RACING AT RED OAK

Red Oak, Ia., June 18—Six thousand people witnessed the southwestern Iowa motor races at Red Oak Wednesday. It was the biggest gathering seen at a motor meet in Iowa and the quarter stretch was confiscated by 400 automobiles from Iowa, Omaha and eastern Nebraska. The spectacular race of the day was a 25-mile

event won by Walter Smith of Shenandoah in a Hupmobile. A National driven by A. Merrill of Omaha won the 15-mile event from eleven entries in 20 minutes flat, and E-M-F taking second place. Robbins driving an E-M-F won the 10-mile.

### FLANDERS IN MISSOURI

St. Louis, Mo., June 20—The Flanders Under Three Flags car, since leaving Detroit last Wednesday morning, has made good progress throughout the country, and since then has run through Ohio and Indiana and now is well on its way into Missouri. It reached Toledo last Wednesday, Huntington, Ind., on Thursday, Indianapolis on Friday, and was in Terre Haute on Saturday. From here it left for Springfield, Mo., with George Meininger, driver of the 1909 Glidden pathfinder, at the wheel instead of Lane, who is laid up with a sprained right shoulder.

### ENGINEERS' ELECTION

New York, June 20—The recent election of the Society of Automobile Engineers resulted as follows:

H. E. Coffin, president; Henri Chatain, first vice-president; R. C. Carpenter, second vice-president, chairman executive committee; A. H. Whiting, treasurer; Coker F. Clarkson, acting secretary; David Ferguson, manager, 1911; F. J. Newman, manager, 1911; Hermann F. Cuntz, manager, 1912; W. G. Wall, manager, 1912; H. M. Donaldson, manager, 1912; A. L. Riker, past president; Thomas J. Fay, past president; Henry Hess, past president, members executive committee.

Finance committee—H. M. Swetland, chairman; A. L. Riker, 1915; W. G. Wall, 1911; H. M. Swetland, 1912; A. H. Whiting, 1913; W. S. Gorton, 1914.

House committee—A. C. Bergman, 1911; A. J. Moulton, 1912; G. A. Wells, 1913; Henry Souther, 1914.

Library committee—H. B. Anderson, 1911; H. G. Chatain, 1912; H. Souther, 1913; J. M. Ellsworth, 1914; T. J. Fay, 1915.

Publication committee—E. A. Rutenber, 1911; H. M. Donaldson, 1912; C. E. Duryea, 1913; R. C. Carpenter, 1914; Dr. Hutton, 1915.

Papers committee—H. L. Towle, 1911; C. E. Duryea, 1912; C. B. Hayward, 1913; R. C. Carpenter, 1914; Dr. Hutton, 1915.

Membership committee—F. J. Newman, 1911; J. G. Perrin, 1912; J. Wilkinson, 1913; H. G. Chatain, 1914; B. D. Gray, 1915.

Meetings committee—H. M. Swetland, chairman; A. L. McMurtry, 1911; H. M. Swetland, 1912; F. J. Newman, 1913; H. E. Coffin, 1914; Hermann F. Cuntz, 1915.

### BROOKLYN CARDS A TEST

New York, June 20—Announcement is made by the members of the Brooklyn Motor Vehicle Dealers' Association that they are to hold a 2-day reliability contest on Long Island during the latter part of July. The contest will be in the form of a tour, approximately averaging 200 miles for each day. The course has been decided upon in a tentative way, and it is certain that cars will start and finish in Brooklyn. Aside from the contesting division there will be a tourist section, in which contestants will compete in secret time. Hidden controls will be established at several points along the route and a checker will clock the time each car passes a hidden control. The car that averages the nearest mileage to the required schedule will be declared the winner.



ON THE SANTA FE TRAIL—CARS LINED UP ON CONVICT-BUILT ROAD IN THE ROCKIES ABOVE CANON CITY, COLO.



HISTORIC CANNON AT FORT DODGE

OMAHA, NEB., June 19—Miss Blanche Scott, the woman transcontinentalist, arrived in Omaha on Saturday last, radiant in her enthusiasm over Iowa roads. Miss Scott's trip across Iowa was made between Wednesday morning and Saturday night,

## Trans-continental Trail Across

her total mileage being 474 miles, 222 of which was over the new Des Moines section of a transcontinental highway across the state of Iowa, which is styled the river to river road, over the condition of which Miss Scott, the first transcontinentalist to drive over it was very enthusiastic, stating that beyond question or doubt it was the finest piece of road she had traversed since leaving New York city. The last 187 miles, 2,857 which she has driven since leaving New York city, was over this highway.

Although the road is so apparently the main highway and the signboards and markings are as complete and modern as found anywhere in the country, the fact that Miss Scott was the first transcontinentalist to pass over the road, in its improved form, was so appreciated by the promoters that she was provided with local pilotage by the committee, men of the different counties for the entire distance between Des Moines and Omaha.

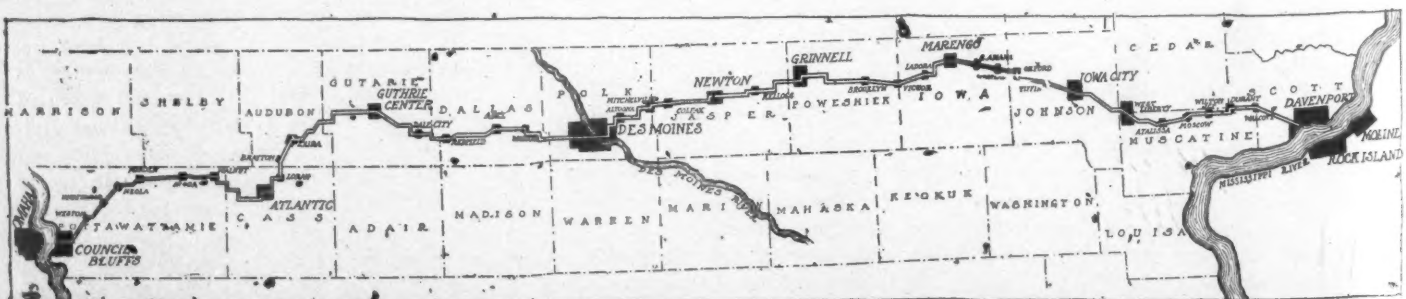
Some months ago E. W. Weeks, of Guthrie Center, Iowa, and J. W. Eichinger, of Des Moines, with the assistance of Governor Carroll, organized the Iowa Trans-continental Highway River to River Association, the local county road supervisors of the twelve counties passed through being elected as executive committeemen in conjunction with one prominent motorist in each county, who, after each rainstorm or at regular periods, attached to their cars the ordinary type of road drag and dragged that section of the road in

their county, which averages about 30 miles. It took 4 months to complete the organization that since has built 380 miles of very superior highway.

The idea was conceived and put in its concrete form but 6 months ago. It began with the general good roads campaign; it led to a good roads convention attended by over 2,000 people. The committeemen were elected, the road was graded, drained and dragged, dovetailing it up from one county to another, until Iowa today has a main trunk line across the state from east to west that is the superior of anything in this country. This has been the inspiration for a large number of feeding roads and there is strong promise that irrespective of the foreign impression created by the calamity howlers' description of Iowa gumbo that Iowa has today as many miles of good roads and will in the near future have more miles of superior highway than any state in the Union.

### SOUTH'S NEW HIGHWAY

Beaumont, Tex., June 18—Sam Park, the wealthy lumber manufacturer of Beaumont, who is promoting the construction of a continuous highway between New Orleans and San Antonio, a distance of approximately 600 miles, is receiving substantial aid from the parishes and counties through which the road will pass. Intense interest has been awakened in the project by the people along the route, especially the motorists, and bond issues for the construc-



MAP SHOWING TRANSCONTINENTAL TRAIL ACROSS IOWA FOLLOWED BY MISS SCOTT IN OVERLAND





ON THE SANTA FE TRAIL—ON THE SKYLINE DRIVE IN THE ROCKIES 800 FEET ABOVE CANON CITY

## Iowa Tried By Miss Blanche Scott

tion of the proposed road have been voted in a number of parishes in Louisiana. Similar steps are to be taken in several Texas counties. This method of each county bearing its proportionate expense of constructing the road meets with general favor. Many links of the highway already are in finished condition, and it is thought by Mr. Park that the project will have reached a point of realization within another 6 months, or a year, at the latest. It is planned that the stretch of this road between New Orleans and Houston, via Beaumont, 353 miles, shall be constructed of shells. The shell beds are abundant all along the gulf coast and the material makes an ideal roadway. Nearly one-half of the proposed road bordering the coast is already shelled and the connecting links are being rapidly constructed. The road between Houston and San Antonio will be constructed of crushed limestone. This New Orleans-San Antonio highway will be the longest continuous good road in the south. It is expected that it will be largely patronized by motorists, particularly during the winter touring season. The road will also serve to give a transportation outlet for many farmers along the route.

### SPokane DOING IT RIGHT

Spokane, Wash., June 18—The position of first place in the activities of road-building among the cities of the north-west will belong to Spokane within the near future on the completion of the new macadamized west road and the several

other roadways now planned. Spokane is in an exceedingly advantageous position to provide good highways, as the country on the north, east and south of the city falls away in unbroken regularity. To the west, the country heretofore almost impassable on account of its forbidding grades and rocky formation, will be traversed by the graceful winding highway that will be far reputed for its commercial value as well as its unexcelled rustic scenery.

The contract for the west road was let together with the contracts for the Regal, Spangle and Davenport-Harrington projects this week, when the state highway commission opened the bids at Olympia. The total estimated cost for the construction is \$70,000. No expense will be spared to insure the road a maximum of excellence. The entire length of the roadway is 17 miles, extending from the west city limits to the Lincoln county line. The graded width will be 60 feet, allowing for sidewalks and parking, and for the first 3 miles a 16-foot strip through the center of the road will be laid in oil macadam, with a 4-foot shoulder of gravel on either side. The remaining 14 miles will be gravel-dressed.

The Regal and Spangle roads are to cost \$14,003 and \$14,170, respectively, and will be constructed of oil macadam. The length of the two will total 3 miles. The Davenport-Harrington project will cover a 12-mile stretch of territory and will be constructed of gravel. The cost has been



OLD SANTA FE TRAIL-MARKER

estimated at \$32,000. The Great Apple Way, connecting this city with Coeur d'Alene, is also to be completed soon and will prove to be a feature as novel as it is beautiful. Every effort is being made to complete the highway.



NEW MOTORING ROAD THAT IS BEING BUILT FROM SAN ANTONIO, TEX., TO NEW ORLEANS, LA.

OTHERS than the American Automobile Association and its affiliated clubs have become interested in good roads and the signboarding of touring thoroughfares throughout the United States. One of the latest recruits is the B. F. Goodrich Co., of Akron, O., which has undertaken to erect posts throughout the country for the guidance of the tourists. The company is placing a signpost at every 4 miles along the main highway route from Cleveland to Buffalo; across to Albany, and down to New York. From New York the line of post will run out to Philadelphia, over Long Island, and to Atlantic City and Lakewood. Further east the posts will be put up through Connecticut to Boston, and then into the mountain resort regions of New England. After this, the central west, then the southwest, and eventually every really traversable part of the United States.

The post used for these signs is a heavy timber 4 by 4, in cross-section, and about

## Goodrich Company Undertakes



FIRST STEP IN PLANTING GOODRICH SIGNS



TWO LONG HARD HILLS ON OKLAHOMA RELIABILITY RUN



GRANITE, OKLA., WHERE STREET IS PAVED WITH GRANITE BLOCKS

12 feet high. This piece is thoroughly creosoted to make it weatherproof. On the top is the sign plate. This is a round metal disk 2 feet in diameter, enclosed by a painted border representing a Goodrich pneumatic tire. Through the center of this round piece are drawn two arrow blades with spaces for the names of three towns, the next town, the next largest town, and the ultimate destination. Opposite each name are the distances, carefully reckoned to the fraction of a mile. Projecting out from the disk and pointing in the remaining directions are two other blades. These are brightly painted in contrasting colors so that the information is easily read by the traveler as he sits in his conveyance.

Perhaps the most careful preparation and foresight for the comfort of the tourist is the provision of symbols to indicate ways of meeting the emergencies of the road. Opposite the name of a town is a symbol indicating the kind of repair there to be obtained. Lower down on the post is a plate bearing a copy of all the symbols, together with an explanation of each one. For example, two rings, one enclosed with-



GOODRICH SIGN INTERPRETATIONS



## To Signboard The United States



PUTTING FINISHING TOUCHES ON GOODRICH SIGNBOARD

in the other, indicate "Goodrich Tire Station"; a large solid black circle means "Gasoline Supply Station"; a hammer and wrench crossed, call attention to a "Reliable Repair Shop"; besides these are the proper designations for "Danger Crossing," "Curve Danger" and "Go Slow."

The sign is placed in a hole  $3\frac{1}{2}$  feet deep, and rested on a large stone so as to prevent wood decay by contact with the earth. After the post is set the hole is filled with earth and rocks up to within 4 inches of the surface. The rest of the space is filled with concrete. Thus the post is perfectly firm, weatherproof and permanently in service.

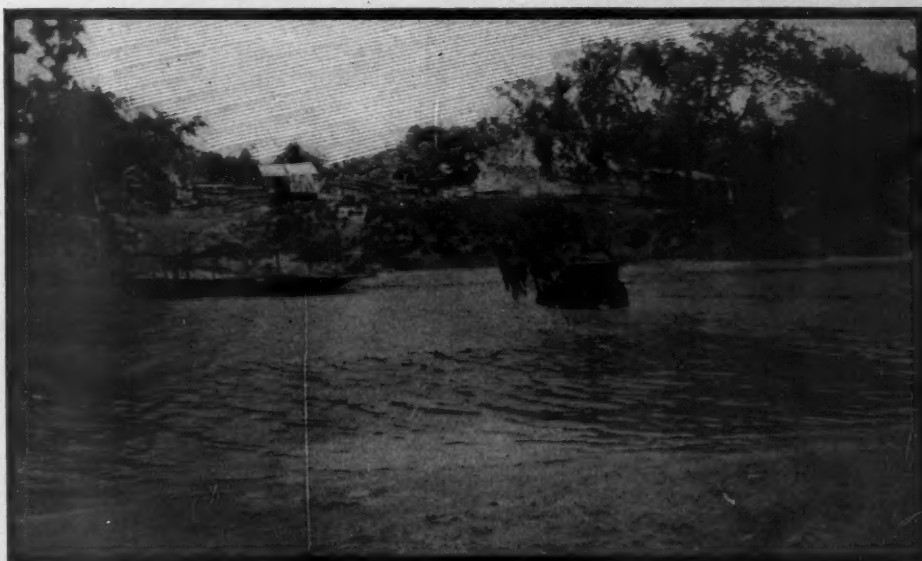
The problems involved in the construction of these posts have been most varied. The design of the metal piece has been the subject of experiment to determine the proper shape and area so that there will not be straining resistance to the wind. Metal rust has been avoided not only by the application of liquid preparations, but in the composition of the metal itself by a special process. The road equipment consists of a supply of posts, metal pieces and the digging tools. These are carried in

motor vans and trucks through the different sections of the country. Two men work with each van, and live on board. They put in about nine signs a day. The location of the signs has been worked out for every crossroads and town; and this information was gathered before a single post was set up. A series of topographical maps from the United States geological survey has been used. Each one of these maps contains two or three counties, and indicates highways, streams, and surface features.



There is another fund of information, which will be put at the disposal of the user of the highway, and which will have the greatest significance, particularly to the good roads cause. The data relates to the condition of highways over the whole territory posted. For each post put up, the card, pictured, is made out. Each post is numbered, the date of placing is put down, and the directions it faces and its position on the highway, recorded.



OKLAHOMA RELIABILITY—A VERY CROOKED BRIDGE OUT OF CLINTON, OKLA.



OKLAHOMA RELIABILITY CAR BEING TOWED ACROSS RED RIVER

Marker No. _____		Date _____
Road Conditions Sand _____ Clay _____ Rock _____ Mud _____ Brick _____		
		
Gasoline Station _____	R. R. Crossing _____	
Repair Garage _____	Dangerous Curve _____	
Goodrich Tires _____	Hotel Accommodations _____	

SHEET FOR GATHERING SIGN DATA

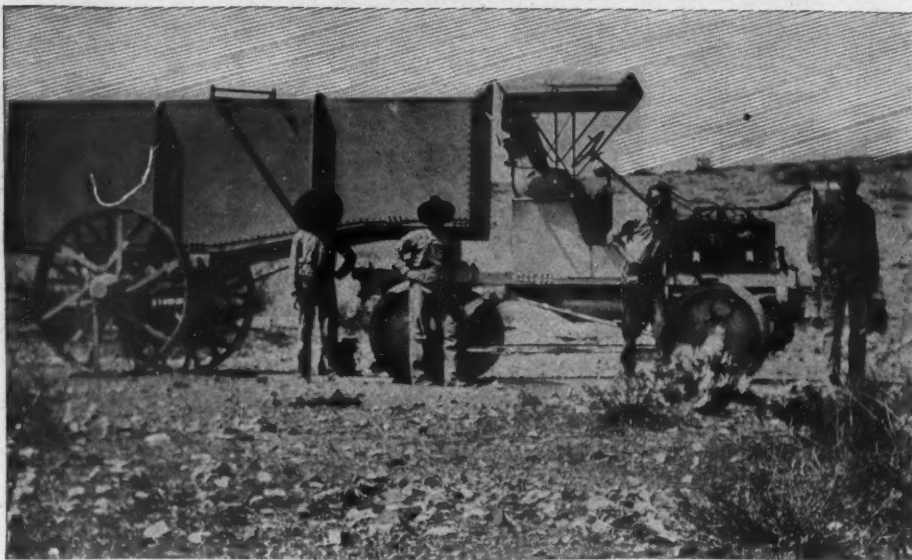
A MOTOR transportation line that is of unusual interest and importance to all persons concerned in heavy hauling through the arid regions of this country and Mexico is in operation between Marathon, Tex., and a point on the Rio Grande, 80 miles south of here. The mines of the Del Carmen Mining Co. are situated 5 miles from the international boundary stream on the Mexico side. The ores are lead and zinc, and are very rich, the zinc values being 45 per cent. For several years the work of blocking out the ore has been going on, but the transportation problem was such a difficult one that shipments could not be made. The nearest railroad point is Marathon, on the Southern Pacific, 80 miles from the river crossing, as above stated.

It finally was decided by the company to build an aerial tramway across the river in order to handle the ore through a territory that is absolutely impassable for anything but burros. This tramway is 6½ miles long and was constructed at a cost of \$110,000 gold. The problem of transporting the ore from the Texas terminal of the tramway into Marathon still was unsolved, but the company constructed a fairly good wagon road all the way at a cost of about \$50,000, and a manufacturer of gasoline traction engines undertook to furnish motive power of that type which would handle the ore economically and speedily. These traction engines proved failures, it being found that they were of faulty construction and unfit for this sort of service.

At this time W. G. E. Rolaff, a mechanical and electrical engineer, was asked by the company to figure out some method of transportation which would overcome all the difficulties prevailing for this particular haul. The problems to be met with consisted chiefly of the long distance, the absolute absence of fuel of any sort along the route, and the lack of water, there being no water on the road for 40 miles. After thoroughly investigating the matter Mr. Rolaff decided that neither a gasoline tractor nor an electric truck would be satisfactory because of the claimed weakness of each, but a combination of the two which would eliminate batteries of the electric truck and gears and clutches of the gasoline truck, possibly would solve the problem. With this point in view he undertook to design a new type of truck for the service, and the results have entirely vindicated his judgment. It is claimed that the transportation problem is conclusively solved in the successful operation of this combination truck. All or most of the inherent faults of the ordinary machines have been eliminated and economy and efficiency have not been sacrificed.

This gas-electric truck has as a power plant a four-cylinder 6 by 6½-inch gas engine, direct connected to a 15-kilowatt interpole compound wound generator with a controller at the driver's seat. The frame of the car is built of 5-inch steel channels

## In the Realm of the



GASOLINE-ELECTRIC TRUCK USED IN DESERT WORK

in which the subframe carrying the power plant is suspended from three points. The engine is specially made for this machine and has absolutely no parts, such as gears, springs, valves, rods, etc., exposed, but all of these are run inside the crankcase and operate in a bath of oil. Lubrication is had by a self-contained system involving no oil pipes of any sort, and the tell-tale on the driver's seat is a perfect indicator as to the proper working of the oiling system. This construction is a necessity by reason of the enormous amount of grit and sand which the machine is naturally exposed to in the desert.

The dynamo which is direct connected to the engine by a flexible coupling is especially made for this service and will carry an overload of 100 per cent with ease for a sufficient length of time to overcome any ordinary hard pulls. The voltage of this generator is 125.

As driving motors the Couple Gear Greight Wheel Co.'s wheels are being used. They consist of a steel shell enclosing a motor operating from pinions on the armatureshaft engaging racks mounted inside of the shell. For this particular purpose



CABLE TERMINUS ON TEXAS SIDE

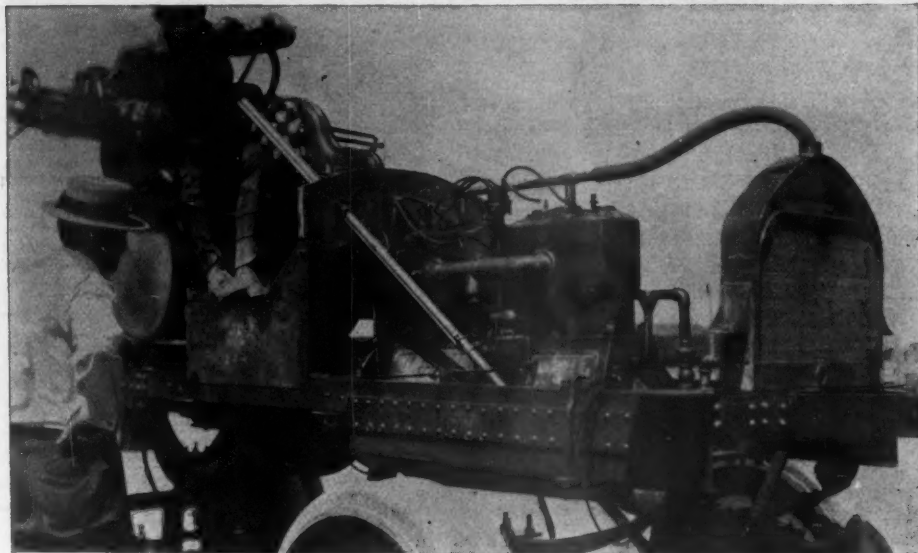
this construction is ideal, because it is absolutely dustproof, waterproof, protected



ENGLISH DEMONSTRATION OF WORK OF COMMERCIAL TRUCKS



# Commercial Car



DETAILS SHOWING ENGINE SUSPENSION OF GASOLINE-ELECTRIC TRUCK



CABLE TERMINUS—MEXICAN SIDE

against all possible abuse from outside influences, and are capable of an enormous

overload for a short time. The efficiency of these motors in connection with the couple-gear wheels is very high, and the losses between the motor and the wheels are less than 5 per cent. These motors are connected in such manner that by a simple throw of the controller lever the operator can change from a series connection on to a series parallel connection and at no time will he jar the machinery as he would if he had to throw gear levers and clutches in a straight gasoline truck.

The truck proper is suspended in front on semi-elliptic springs designed to carry the power plant, and in the rear on semi-elliptic springs sufficiently heavy to carry a portion of the load of ore. The ore truck proper is, in fact, a two-wheel cart, 15 feet long, the front of which rests upon the rear part of the power truck. The connection between these two is made by a turntable and an universal ball and socket joint. This allows for all inequalities of the road and makes turning and backing a very simple operation. The wheels of the ore truck are 5 feet in diameter with a 10-inch face. The hubs are cast steel with 9-in-h roller bearings and

two ball thrust bearings in each hub. The axle of the ore truck is  $4\frac{1}{2}$  inches square, milled steel. The body of the truck will carry 15 tons of ore.

The loading of this ore car is very simple, as it fits under the chutes at the end of the aerial tramway, and the only thing necessary to do is to open the gate and the truck can be filled in a very few minutes. The unloading of this truck is made comparatively simple at the railroad station. A small overhead hoist, operated by electricity, picks up the front end of the ore car, automatically disengaging same from the power truck, and as the end of the ore car is lifted, the load is dumped into underground bins from which a bucket elevator deposits the ore direct into the cars for shipment.

This power truck has a gasoline capacity of 40 gallons, which is sufficient to carry it over 80 or 100 miles of road. In addition to being a four-wheel drive, the truck also steers by all four wheels, which makes turning and backing very simple and allows it to be operated around sharp and narrow mountain roads. Broadly speaking, the truck will travel 1 mile with a fuel consumption of approximately  $\frac{1}{2}$  gallon of low-grade gasoline. The amount of lubricating oil is a negligible quantity. The truck makes a speed of 9 to 10 miles an hour without load on a good road and will comfortably climb any grades that exist on the 80-mile run between Marathon and the Rio Grande. Some of these grades are as great as 14 per cent, but none of them is very long. When loaded the truck travels approximately 4 to 6 miles per hour, according to the road surface and the grade it encounters.

On the dashboard the operator has a volt and ammeter which instrument shows him at all times exactly what current the truck is consuming. During a recent series of tests which were made with the truck it was found that when traveling at an average rate of 8 to 9 miles an hour it consumed approximately  $7\frac{1}{2}$  kilowatts or about 10 horsepower, without load. Loaded, it showed a current consumption of about 10 kilowatts on level load, and on some of the hills climbed the current consumption rose as high as 20 kilowatts for short intervals. It will go through sand with comparative ease, and the only thing that has been found that will stop it from successfully negotiating a road is slimy, slick mud. In one instance the drivers sank down in this sort of mud 7 inches and the trailer went down as deep as 22 inches, yet by careful manipulations the truck pulled out successfully with its load, going over about 200 yards of this kind of road.

## NOVEL ENGLISH TRIALS

The transportation of goods by the business houses of London has undergone a remarkable change during the last few years, and at the present time practically all the leading commercial institutions employ the mechanically-propelled vehicle for



ENGLISH GIVE PRIZES TO COMMERCIAL CARS

delivery and collecting work. Seeing, then, that the motor vehicle plays such a large part in industrial England, the Commercial Motor Users' Association is doing good work by its scheme for the encouragement of efficient and careful drivers. Each year the association holds a parade of commercial motor vehicles, which are subjected to a searching scrutiny. The drivers themselves are questioned with a view to ascertaining the extent of their knowledge, and prizes are awarded on various scores, such as cleanliness, careful driving, etc.

The fourth competition of the series was held June 4 in Lincoln's Inn fields, London, where about 100 vehicles, ranging from a small delivery triar to huge mail vans and tractors with trailers attached, assembled. Such well-known employers of labor as the general postoffice, Westminster city council, Chelsea borough council and the Midland Railway Co. were represented, the Westminster council sending no fewer than nine vehicles. One of the most interesting cars competing was a Milnes-Daimler motor bus, the oldest vehicle of its kind now running on the London streets. Its mileage, during the 6 years of public service which it has seen stands at the nice little aggregate of 148,100 miles. The driver of this veteran—C. Holgate—was the first motor bus driver to receive a license. Many other competing vehicles had records of over 60,000 miles standing to their credit. For instance, a Leyland lorry employed by a well-known firm of brewers had covered 75,800 miles, a Leyland steam wagon belonging to the Chelsea council had a mileage record of 85,000 miles and 79,800 miles was marked to a Milnes-Daimler van employed by T. Telleng, Ltd.

A cup was offered by the Commercial Motor for the owner of the best team of six vehicles, and of the ten competing groups the Eastern Motor Wagon Co.'s six Foden wagons won by a single point in 243 from Messrs. Mann, Crossman & Paulin's team of Leyland lorries. The chief individual wards were as follows:

#### GASOLINE VEHICLES

G. P. O. Stores Dept. Mandsley van, driver, E. Grover, 23,100 miles.....	\$25
Pullar & Sons, Milnes-Daimler van, driver, G. Donaldson, 23,100 miles.....	15
T. Tilling, Limited, Milnes-Daimler van, driver, W. Chapman, 79,800 miles.....	15
Westminster city council, Thornycroft wagon, driver, J. Fox, 18,000 miles.....	10
J. Nelson & Sons, Milnes-Daimler van, driver, R. Spurrier, 18,500 miles.....	10
Midland Railway Co., Albion van, driver, A. Foster, 25,500 miles.....	10

#### STEAM VEHICLES

Chislehurst Mineral Water Co., Foden lorry, driver, A. Smith, 54,000 miles.....	\$25
J. G. Lane, Burrell tractor, driver, W. Sagero, 7,000 miles.....	15
Joseph Rank, Limited, Foden wagon, driver, W. Wilcox, 20,200 miles.....	15
Ruhmaworth & Uxbridge, Valley Water Co., Auding & Porter tractor, driver, F. White, 13,400 miles.....	10
Eastern Motor Wagon Co., Foden wagon, driver, G. Brooke, 40,000 miles.....	10
Westminster city council, Leyland wagon, driver, R. Slater, 36,000 miles.....	10
<b>PRIZE FOR MILEAGE AND CONDITION:</b>	
T. Tilling, Limited, Milnes-Daimler bus, driver, C. Holgate, 148,100 miles.....	\$500

Class awards presented by various manufacturers also were made.

# Manufacturers'

## CONTEST RULES OF 1910

**D**ETROIT, Mich.—Editor Motor Age—The 1910 rules governing motor car contests in this country provide classes in which may be entered anything from the one-lunger to the biggest six or eight-cylinder road locomotive that has been or can be built. They provide classes wherein can be entered bona fide stock cars and yet other classes for cars of special construction built for racing only.

It has not been the intent in the draft of the 1910 rules to work a hardship upon any concern or motor car owner by debarment from participation in speed and endurance contests. There has, however, been a great effort put forward to insure honesty of declaration and honesty of entry of cars into those classes for which their specifications permit them to qualify and a tremendous effort both upon the part of the Manufacturers' Contest Association and upon the part of the American Automobile Association to make the term stock car something more than a joke and a misnomer. We believe the great majority, both of the public and of the motor car makers, will heartily endorse these accomplishments.

Nowhere in the rules is there the slightest discrimination, but everywhere will be found evidences of a more careful drafting of those specifications which differentiate the various classes, and which tend to insure absolute honesty of entry. An especial effort has been made to restrict stock car events to those cars which are really stock in accordance with the meaning of this term in the minds of the public.

While the divisions of classes A and B are for bona fide stock machines only, classes C and D afford every opportunity for the entry of special cars; consequently, there is no excuse upon the part of a manufacturer or of an owner for an attempt at evasion of the stock car rule. A stock car race is one in which, presumably, are to be entered cars identical in all essential details of materials and mechanical construction to those cars which stand upon the showroom floor of the manufacturer's representative and which are delivered to the purchaser. The 1910 definition of a stock car is as follows:

**Stock Car**—A motor car, the complete description of which, upon the official blank provided for the purpose, has been filed with the main office of the technical committee of the contest board at least 30 days prior to the date of the contest entered, the quantity production of which bears to the total yearly production of its manufacturer the ratio set forth in the following table, and which is on sale through the regular selling representatives of the manufacturer. Official blanks for stock car description may be obtained from the chairman of the contest board, 437 Fifth avenue, New York city. Computation in connection with the following table shall be based upon a period of time from July 1 to June 30 of the following year. In computing the annual output of a manufacturer, no account shall be taken of his production of taxicabs, delivery wagons or other vehicles designed for commercial use.

At the discretion of the contest board any

competitor may be required to file a bond of \$5,000 that the entry made by him is a bona fide stock car within the meaning of this definition:

Total output, cars	Percentage	No. of same model, cars
10,000 or more	4.5% equaling	450 minimum
8,000 to 9,999	5.0% equaling	400 minimum
6,000 to 7,999	6.0% equaling	360 minimum
4,000 to 5,999	7.0% equaling	280 minimum
2,000 to 3,999	8.0% equaling	160 minimum
1,000 to 1,999	9.0% equaling	90 minimum
500 to 999	10.0% equaling	50 minimum
250 to 499	16.0% equaling	40 minimum
100 to 249	30.0% equaling	30 minimum
50 to 99	50.0% equaling	25 minimum

**Explanation**—Percentages are calculated on actual total output. For example: If the total annual output of a manufacturer is 2,500 cars, at least 8 per cent of said output, or 200 cars, must be of the same model in order to constitute such model a stock car under this definition. The required percentage of output shall in every case be in accordance with the above table and in no event shall it be fewer than twenty-five cars.

During the past seasons the records of the technical committees have shown many evasion of the stock car rule. Many of these evasions could not be prevented, owing to laxity of the existing contest rules of the American Automobile Association governing motor car events. Moreover, contest affairs were in a chaotic condition owing to an attempted control of national affairs by at least two other bodies. These unsatisfactory conditions led to the formation about a year and a half ago of the Manufacturers' Contest Association, embracing within its membership nearly all the leading motor car makers.

The objects of this organization are, quoting from article 2 of the constitution:

The advancing of healthy, sportsmanlike and uniform conditions in motoring contests of every nature and causing such contests to be held under the auspices of the active organization, supported and governed by representative interests in motor car affairs.

The membership of the Manufacturers' Contest Association, again quoting from the constitution, article 3, section 1:

Shall be composed of actively engaged American manufacturers in good standing who have built at least fifty or more cars, or are actively engaged importers in good standing who have imported fifty or more cars of the same make and which they represent at the time of application for membership, etc.

Section 6 of the by-laws reads partially as follows:

**General Rules Committee**—There shall be a committee known as the general rules committee, consisting of a chairman, who shall be elected in the manner of electing officers hereinbefore prescribed, and twenty-four associate members of such committee.

Section 8 of the by-laws is quoted herewith in its entirety:

The special rules and classification committee shall prepare classifications and formulae applying to all contests. It shall submit on or before September 1 of each year to the contest board of the American Automobile Association or its successors, or a similar board, recommendations as a basis for creating general contest rules to govern for the succeeding year. It also shall transmit to the Automobile Club of America, or the corresponding body then repre-





# Communication

senting foreign motoring interests in this country, at least 2 months in advance of the meeting of the Association of Recognized Automobile Clubs or corresponding body, its recommendations and suggestions on behalf of the Manufacturers' Contest Association. Such classifications and formulae compiled by the special rules and classification committee shall be submitted by mail or otherwise to the members of the general rules committee for comment and revision, and their subsequent disposal by the special rules and classification committee shall be final and binding.

Thus it will be seen that the rules and conditions governing motor car contests have been evolved by a co-operative action upon the part of the representative motor car manufacturers of America, working for the interests of contests.

The interests of the individual makers are, as they are in any other organized business activity, made secondary to the average interest of the organization as a whole, but each individual concern is put upon an equal footing in that its cars are forced to compete in stock car events under the same honestly administered stock car requirements. The purchaser of a motor car during the season 1910 may reasonably base his selection, if he so desires, upon the performance of those stock cars entered in any one of the leading stock car events held under the sanction of the American Automobile Association.

So flagrant did the abuse of the spirit of the stock car rule become in the contests of 1909 that the public naturally began to be extremely skeptical upon all matters touching stock cars and stock car competitions. That this feeling upon the part of the public—the owners and prospective owners of thousands of motor cars—did and does exist, has been clearly proven by the many inquiries upon such matters which have been registered with the several technical motor car papers of the country by the readers of these publications.

To inject into the motor car contest and its control those same principles of business honesty which are held to be indispensable in other lines of business activity and to impress upon the minds of the buying public a feeling of confidence in the stock car claims of the American manufacturers, have been the chief efforts of the general rules committee of the Manufacturers' Contest Association and of the contest board of the American Automobile Association.

Upon the contest board of the American Automobile Association falls the administration of those rules which have been accepted by the manufacturers as for the

best interests of the motor car industry as a whole. Motor car racing, if followed consistently by the manufacturer, is entirely too expensive to make it a matter of sport. If it is to be a matter of business, a source of publicity and a means of demonstrating to the buying public those qualities of motor car construction and endurance which must recommend his product for the every-day use of the purchaser, then certainly there can be no objection to the introduction into motor car contest affairs those same principles of honest business administration which the manufacturer and the public would expect to maintain in any other line involving the expenditure of a similar or equal amount of money and effort.

Moreover, the maker who elects to obtain through stock car racing and contest work those important advantages in an engineering, publicity and selling way, and who goes at it honestly, making entry of his bona fide stock product, cannot be blamed for insisting upon an impartial administration of those rules which he has himself observed and which, having been adopted by the two great organizations representing respectively the manufacturer and the motor car user—the Manufacturers' Contest Association and the American Automobile Association—necessarily must govern in motor car racing until revoked or revised by these same governing organizations.

In stock chassis racing it is recognized that certain changes in equipment and arrangement of parts must be permitted for considerations of the safety both of the car occupants and of the spectators. These options permitted do not, however, embrace any changes either in material or important constructions.

That motor car manufacturer who wins by methods of unfairness not in accordance with the rules, a stock car event, is guilty of an offense against those who compete with him—an offense of a seriousness certainly represented by the thousands of dollars spent by his competitors in an effort to win honestly that which he has obtained by unfair means. In any other commercial activity, such methods would be made immediate ground for legal action for the recovery of damages.

If a manufacturer spends thousands of dollars in the purchase of publicity and other advantages of which he finds himself fraudulently deprived, should he not have the same protection and legal redress whether this money be spent by him in the purchase of advertising space in a magazine or in a publicity campaign upon the road and tracks? It would seem so, in my opinion.

That the contest board might be given

the necessary authority in the administration and enforcement of these rules, the following three rules were drafted by the general rules committee of the Manufacturers' Contest Association and in turn adopted by the A. A. A.

**Bona Fide Status of Stock Car**—It is the intention of the rules relating to stock car and stock chassis competitions that such competitions shall be restricted to those cars identical in specification, materials and design with the manufacturer's product which is manufactured in quantity and is offered for sale and sold in a bona fide manner to the public through the regular selling agencies of the manufacturer.

**Evasion of Stock Car Definition**—In the event of evasion on the part of entrants of the spirit of the stock car or stock chassis definition concerning points not definitely stated in these rules, the contest board shall have full power to render such decision as it may deem for the welfare of the sport and industry.

**Technical Committee**—In any case where it may be necessary to establish the status of any car alleged to be a stock car under the definition contained in these rules, the technical committee of the contest board shall have the right to visit the factory of the manufacturer of such car, who shall be required to submit to the committee such evidence as it may require to verify the allegation on which the stock status of the car is based.

The technical committee shall also have power to take possession of any competing car either before or after the finish of any contest and make such examination thereof as may be necessary to establish its stock status.

The technical committee of the contest board and the contest board itself will have every support of the Manufacturers' Contest Association in the enforcement of the 1910 contest rules as they now stand. There is not a man in the country better fitted by personal qualities and long training for the administration of the contest affairs than is S. M. Butler, the present chairman of the contest board of the American Automobile Association. Mr. Butler has been intimately associated with motor car racing since its beginning, having served for years as secretary of the Automobile Club of America, now the official representative of this country in all international racing matters. Upon the technical committee of the contest board will be found such well-known names as Alden L. McMurtry, David Beecroft, F. E. Edwards, Henry Souther, Alexander Churchward and Berne Nadall. The energies of these gentlemen will be so directed as to go far in eliminating much that has endangered the future of motor car contests in the United States of America. —Howard E. Coffin, Chairman General Rules Committee, Manufacturers' Contest Association.



## REAR AXLE TYPES

**EL PASO, ILL.**—Editor Motor Age—Through the Readers' Clearing House, will Motor Age explain the difference in the floating, semi-floating, solid and fixed type of rear axle?—C. L. Bailey.

A floating type of rear axle is one in which the wheels have a bearing entirely upon the casing and no bearing whatever upon the transverse driving shafts, so that the weight of the car is carried entirely by the outer casing of the rear axle, or axle tubes, as they are sometimes called, a clutch being used between the ends of the shafts and the wheels to drive the wheels. A semi-floating type of rear axle is one in which the wheels are secured directly to the transverse driving shafts of the rear axle. These shafts not only serve to turn the wheels but also to support the weight of the car. A solid rear axle is, as the name implies, a solid construction having no internal moving parts, such as the type of axle employed on the side chain-driven cars. A fixed rear axle is the same, practically, as a solid or, as it is sometimes called, a dead rear axle, except that it can be of tubular construction. Floating and semi-floating axles are two types generally employed with shaft and bevel gear drive, while solid and fixed axles are to be found on chain-driven cars. A floating type of rear axle is illustrated in Fig 1, C representing the axle casing, H the hub of the wheel, S the end of the spokes of the wheel, and B the bearings. It will be noticed that the wheel bears directly on the casing C and is held by the nut N. The driving shaft F has a flanged end G, which forms a clutch that meshes with the outer edge of the hub H, the depth of the notches in the clutch and hub being represented by the dotted lines D. The clutch and shaft is held in place by the hub cap, and in this type of rear axle construction the transverse driving shaft F

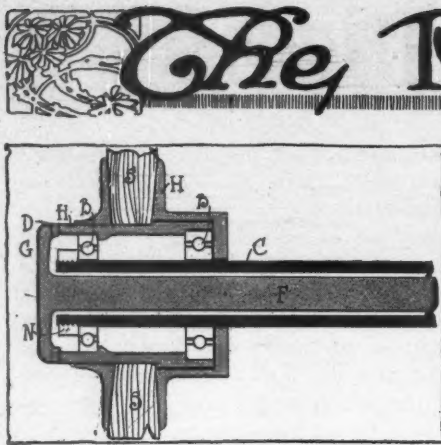


FIG. 1—FLOATING REAR AXLE

on either side of the car may be pulled out of the axle by simply removing the hub cap and without removing the wheel. In Fig. 3 a semi-floating type of rear axle shown. In this construction the wheel is attached directly to the transverse driving shaft and secured thereon. The driving shaft in this case not only serves to propel the wheel but also to support the weight of the car. The hub H of the wheel in this illustration is a snug fit on the end of the transverse shaft F and the Woodruff keys K and the nut N serve to secure the wheel thereto. The hub cap HC is not absolutely necessary in this construction, as it merely serves as an ornament and to protect the nut N from being damaged by rust, etc. A rear axle construction which has no moving parts is known either as solid or fixed. All side chain-driven cars have solid or fixed rear axles. However, in some constructions the axles are a combination of the solid and fixed type. For instance, in a car which is driven by a single chain there is generally a fixed axle and a live axle, the fixed portion being the stationary part to which the springs and brake mechanisms are attached and the live portion being the moving parts—the differential mechanism and driving shafts. Almost all bevelgear rear axles have a fixed and a moving portion. To discriminate between fixed and solid, a fixed rear axle may be either solid or tubular, but it must have no rotary movement, and a solid rear axle is a solid construction and a fixed one also.

## DIFFERENCE IN MAGNETOS

**Kingsley, Ia.**—Editor Motor Age—Please advise through the Readers' Clearing House, the difference between a high-tension and a low-tension magneto. In starting the motor on the magneto, is not the high-tension better than the low? Which is the better of the two?—O. S. Pixler.

The difference between a high-tension and a low-tension magneto is that in a high-tension magneto the secondary winding which produces the high-tension current is incorporated in the magneto, while in the low-tension magneto there is no secondary winding, so that a high-tension current cannot be generated without the use

**EDITOR'S NOTE**—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

of an auxiliary induction coil. In a jump-spark ignition system a motor cannot be started more readily with a high-tension than with a low-tension magneto, but with a make-and-break system employing a low-tension magneto it is easier to start the motor on the magneto than it is to start a motor with a jump-spark system and a high-tension magneto. This latter, however, is not a fair comparison.

## SEEKS A SIREN HORN

**Anniston, Ala.**—Editor Motor Age—Will Motor Age inform me who manufactures the siren horn that works on the flywheel? We wish to use it in the fire department. How long has Barney Oldfield been running a car and how old is he?—Charles Herron.

A siren horn of the type of which you speak may be obtained from almost any large motor car supply house. The Auto Cycle Co., of New York city makes a horn of this type. Barney Oldfield was born January 29, 1878, and became prominent as a driver in the fall of 1902, when he raced old 999.

## CAUSE OF WATER IN MUFFLER

**Alma, Kan.**—Editor Motor Age—Will Motor Age kindly inform me through the Readers' Clearing House what causes a few drops of water to drip from the end of the muffler in my Jackson model E car? The car develops its usual power, and the only trouble experienced is that it requires three or four turns of the crank to start the motor when cold.—A. E. Stuewe.

The water which drips from your muffler is either that which is mixed with the gasoline or that which is formed in the process of combustion in the cylinders of the motor. This is carried to the muffler, which acts as a sort of a trap and holds it in a vaporized condition, and when the motor is stopped and the muffler cools off is condensed and leaks out. This is a very common occurrence and by no means a faulty condition. The fact that you have trouble in starting is most probably due to the water contained in the gasoline. Almost all gasoline nowadays contains some water, and there are few cars that do not require three or four turns of the crank before a start can be made when the motor is cold. If you always can start your motor with only three or four turns of the crank when it is cold, a half turn will probably be all that is necessary when

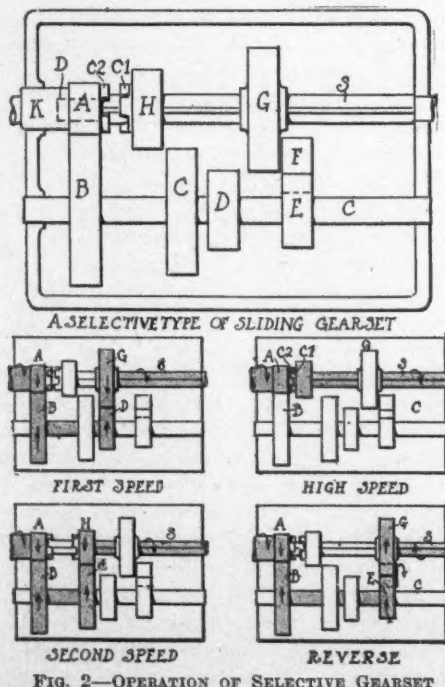


FIG. 2—OPERATION OF SELECTIVE GEARSET



# Clearing House

**EDITORS' NOTE**—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated

the weather is warm, and Motor Age would suggest that you be satisfied with such results. However, if you already have obtained better results, all that is necessary is a better grade of gasoline, and perhaps a little adjustment of the carbureter. Try the gasoline first.

## WANTS TIRE INFORMATION

Winnipeg, Can.—Editor Motor Age—Will Motor Age kindly tell me where I can get a book on vulcanizing tires, with the cost of same.—Amateur.

Motor Age has no record of a publication on the vulcanization of tires and would be glad to hear from any of its readers who might know of such a publication. Manufacturers of small portable vulcanizers generally furnish information relative to the use of their apparatus, which might be of some value to you.

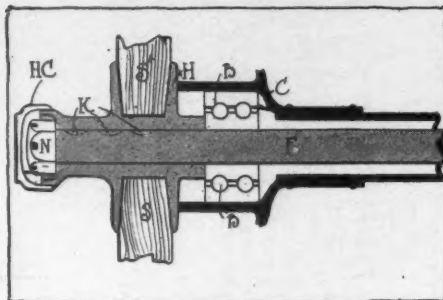
## GEARSET TYPES DEFINED

Trenton, Tenn.—Editor Motor Age.—Will Motor Age explain the following:

1—The difference, if there is any, between selective, selective sliding, and sliding gear. I notice in the supplement to Motor Age, issue March 24, that some cars are said to have selective, others sliding, and still others selective sliding gear.

2—We have a 1909 Reo, and about 2 weeks ago cleaned the cylinders and found carbon about  $\frac{1}{8}$  inch thick on the piston heads. Does Motor Age consider this amount as being badly carbonized? I thought the compression as good before cleaning as it was when new, so I did not undertake grinding the valves. When I put the machine together again I started the motor and it ran fine, but the compression is so strong that it is very hard to turn the motor over. It is harder to crank now than when new. Why is this?—J. C. B.

1—Although a strenuous effort has been made by Motor Age to standardize the names of the various types of gearsets employed in motor cars, only partial success has been obtained, as was indicated in the table to which you refer. A selective gearset is the name given to that type of gearset which permits the operator to throw in at will any speed combination within the range of the gearset, so that it is not necessary in changing from low to high speed to pass through the intermediate speeds as in the progressive system. A diagram of such a gearset is shown in Fig. 2. This diagram represents a



gearset of the three-speed selective type. It has two parallel shafts, a main shaft S and a countershaft C. Gears E, D, C and B are rigidly secured to the countershaft C, while gears G and H are keyed to the shaft S, but free to slide longitudinally thereon. The gear A is rigidly connected to the end K of the shaft which is connected to the motor, and the forward end of the shaft S extends into the end of the shaft K as indicated by the dotted lines D, and is free to revolve therein. F is an intermediate reverse pinion, which in this construction revolves on an independent stub-shaft in the lower part of the case. It always is in mesh with the gear E. The gears A and B also remain constantly in mesh. The diagrams in the lower part of the illustration serve to show the positions of the various gears at the different speeds. For first speed forward, for instance, the shaft K is turning in the direction of the arrow, the gear A turns the gear B and the countershaft C in the opposite direction. The gear D in turn meshes with the gear G and turns the shaft S in the same direction as the shaft K, which is connected with the motor, but at a much lower rate of speed, etc. It will be noticed in this type that for first or reverse speeds the gear G is shifted forward so as to mesh with the gear D, or backward so as to mesh with the reverse gear F, and for second or high speed the gear H is shifted either backward so as to mesh with the gear C or forward so that the clutch C1 on the side of it meshes with the clutch C2 on the side of gear A; thus any of the speeds may be obtained without meshing gears of the intermediate speeds. This is not the case with the progressive type, a diagram of which is shown in Fig. 4. With this type of gearset it is necessary, as the name implies, to make the various speed changes in a definite order, that is, in passing from low to high the intermediate speeds must be passed through in the regular way. In the upper part of this illustration G1, G2 and the sleeve A between them form a single unit, and these gears and the long, small reverse gear RG are the only sliding members in the gearset. Gears G6 and G5 remain constantly in mesh, so that the

countershaft C always revolves when connection is made between the gearset and the motor, providing, of course, that the motor is in operation. For low speed G1 slides back into mesh with G4; for high speed G2 slides through G3 and clutch C1 meshes with clutch C2. Were it not for the fact that before passing from low to high, or from high to low, it is necessary to pass through second speed, which is obtained when gears G2 and G3 are in mesh, this would be a selective type of gearset. Referring to the diagrams showing the different positions of the gears on the various speeds, it will be seen that for first speed gear G1 is in mesh with gear G4, G6 being the driving gear on the main shaft from the motor, G5 the driven gear on the countershaft of the gearset, G4 the driving gear on the countershaft and G1 the driven gear which drives the main shaft of the gearset.

There are some types of gearset on the market in which the gears remain constantly in mesh, clutches such as C1 and C2 being employed to bring about proper co-operation between the various sized gears. This would be called a sliding clutch transmission.

2—One-eighth of an inch of carbon on the cylinder walls of the combustion chamber and on the piston heads is indeed quite an excessive accumulation. If you did nothing to the valves; that is, did not clean the carbon from their heads and around the edges of the heads, Motor Age cannot understand how the increase in compression was brought about. To remove  $\frac{1}{8}$  inch of carbon would be increasing the size of the combustion chamber just  $\frac{1}{8}$  inch in all directions, and would have a tendency to reduce the compression; and in so doing you have perhaps unconsciously done something that enables the valves to seat more tightly and perhaps freed the piston rings.

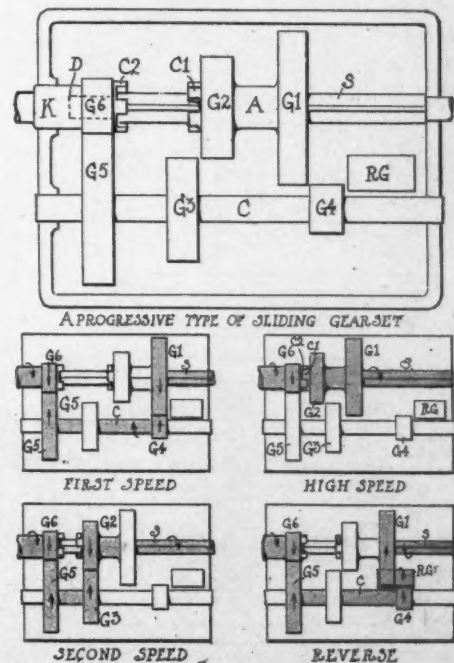


FIG. 4—OPERATION OF PROGRESSIVE GEARSET



# Current Motor Car Patents

**Protector for Pneumatic Tires**—No. 959,957, dated May 31; to Robert J. Morrison, St. Louis, Mo.—This patent relates to a tire protector comprising an inner layer of pliable strips S, Fig. 1, having extensions at both ends formed to provide loops; a middle layer of transverse metal strips R overlying the inner pliable strips S to the extent of the tread portion of the tire; and a circumferential outer pliable band B covering all of said strips. Rivets pass through and connect the inner pliable strips to the outer pliable band, and adjustable draw rings G extend through the loops at the end of the inner pliable strips. Buttons T are secured to one of the metal strips, and one end of the pliable outer band is provided with button holes adapted to receive the buttons.

**Selective Sliding Gearset**—No. 959,878, dated May 31; to Arthur A. Page, Providence, R. I.—The change speed mechanism to which this patent relates is a combination sliding clutch and sliding gear arrangement. As shown in Fig. 2 the gearset is now arranged in the neutral position. For first speed the clutch B would be shifted so as to mesh with the clutch on the side of gear E, thus power would be transmitted from gear G through gear L, the countershaft C, gear K, gear E and the clutch B to the main shaft M. For second speed clutch A would be shifted so as to mesh with the clutch on the side of gear F and power would be transmitted from gear G through gear L, the countershaft C, gear J, gear F and clutch A to the shaft M. For third, or high speed, or direct drive clutch B would be shifted so as to mesh with the clutch on the side of gear G. Thus, power would be transmitted directly from the clutch on gear G to clutch B attached to the main shaft M. When clutch B is shifted so as to mesh with gear G the rocker arm O pivoted at the point P disengages gear L from gear G, thus the countershaft, its gears and all the gears in mesh with them are rendered inoperative. The spring N forces

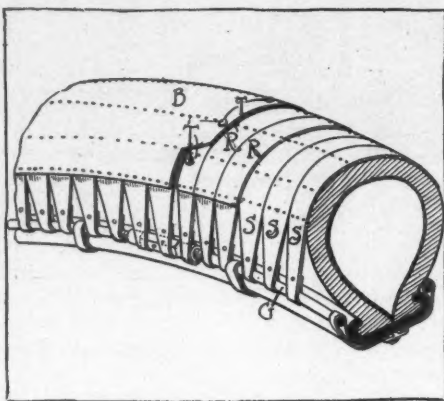


FIG. 1—PROTECTOR FOR PNEUMATIC TIRES

this gear back into engagement when the clutch B is released. For reverse clutch A can be shifted so as to mesh with the clutch on the side of gear H and power would be transmitted from gear G to gear L on the countershaft C, then through gear I, the intermediate pinion X, gear H and clutch A. The intermediate pinion X being interposed between gears I and H, brings about the reverse motion of the shaft M.

**Two-Cycle Motor**—No. 959,905, dated May 31; to Jay F. Woolf, Minneapolis, Minn.—This motor as shown in Fig. 3 differs from other types of two-cycle engines in that both the inlet and exhaust passages are of annular construction; that is, they surround the cylinder walls somewhat in the manner of a water jacket. In operation fuel is admitted to the crank chamber K through the valve V as the piston P rises in the cylinder. When the piston descends again this charge is com-

pressed through the openings E into the annular compression chamber C, and as it nears the bottom of its stroke the inlet passages S, at the upper end of this annular chamber, are uncovered and the fuel compressed therein enters the combustion chamber M. On the upstroke of the piston the charge in the combustion chamber M is compressed, while at the same time a fresh charge is drawn in to the crank chamber through the valve V. Near the top of the combustion chamber M the charge is ignited. The piston descends, and when the annular exhaust port X is uncovered, the burned gases pass through the annular exhaust chamber A and out of the large exhaust opening O. The cooling medium enters the jacket J at the point I and leaves at W.

**Transmission Gearing**—No. 959,900, dated May 31; to William F. Sword, Pawtucket, R. I.—The transmission gearing covered by this patent is arranged as illustrated in Fig. 4. In operation power is transmitted by the shaft S through the bevel pinion P to a large bevel gear, indicated by the line L, which is attached to the squared shaft T. The spur gears G and G1 are also attached to this shaft and means are provided whereby this whole outfit may be moved longitudinally on the guide D so that either of the gears G and G1 may be brought into mesh with gears R and R1, respectively, to bring about two forward speeds. As shown in the illustration, the gearset is now arranged for reverse speed, power being transmitted from the gear G1 through the pinion gear or reverse pinion G2 and the gear R1. The reverse pinion is located on a bell crank and operated by means of the rod D; and when thrown out of mesh takes a position in an upper section of the case, as indicated by the dotted outline O. Means are provided for shifting all of the driving gears as a unit and the latch C, operated by the lever E, locks the mechanism in the various speeds. A casing N incloses the whole outfit.

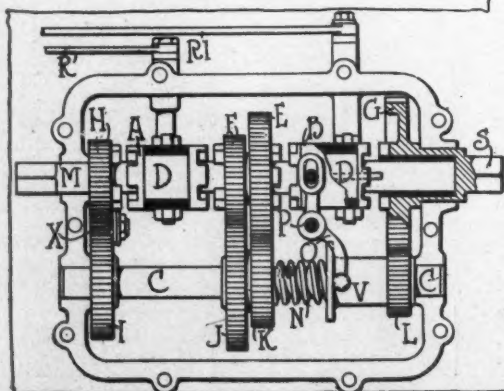


FIG. 2—SELECTIVE SLIDING-CLUTCH GEARSET

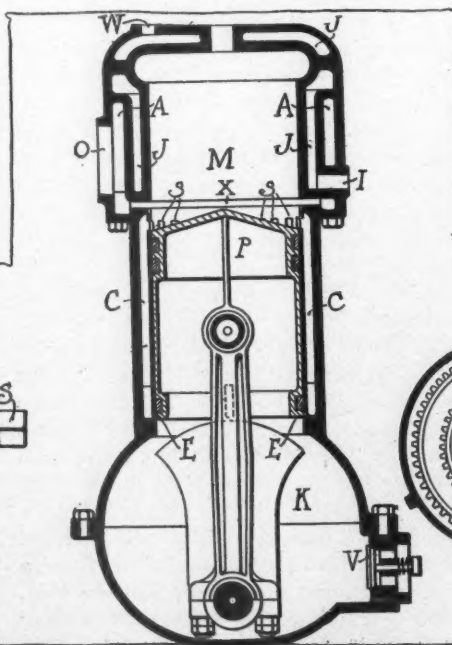


FIG. 3—TWO-CYCLE MOTOR

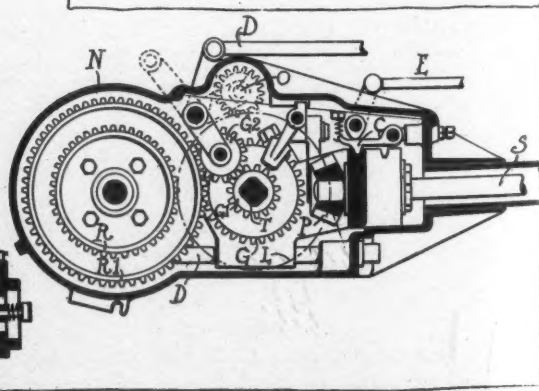


FIG. 4—NEW TYPE OF TRANSMISSION GEARING



# The Motor Car Repair Shop

WITH the advance in tire prices, many owners of motor cars are forced to study methods by which their tire bills may be reduced, and to aid those who are conscientious in the matter a few hints and illustrations are herein given which may be of some value. In the upper portion of Fig. 1 a sketch is shown indicating how tires are damaged by driving in the car tracks. This is a very common cause of excessive tire wear, for driving in the tracks not only wears ridges in the tread but also tends to loosen the rubber from the fabric and causes the swellings known as sand blisters which generally result in a blowout. Of course there are some streets in a city which are so poorly paved that one has either to choose between the car tracks with the damage they might have on the tires, or the rough road surface, which often is strewn with debris, or which makes driving exceptionally uncomfortable and puts a severe strain upon the mechanism of the car. In such cases one should choose the lesser of two evils. On general principles, however, car tracks should be avoided. For those who are forced to use the car tracks at times, however, much unnecessary damage can be avoided by turning out of the track properly. Some drivers in an effort to be extremely careful turn their wheels but slightly and run along the track sometimes for 15 or 20 yards with the wheels running up on one edge but not turned at a sufficient angle to mount the rail and turn out. This is exceptionally hard on the tires. If, as in the lower portion of Fig. 1, a driver when desirous of turning out of a track would swing his wheels hard over as indicated by the dotted lines instead of at just a slight angle he would not rub along the track, but would turn out immediately with less damaging results.

## Grease Detrimental to Tires

It is a well known fact that grease and oil have a most detrimental effect upon rubber such as is used on the tread of a tire. It tends to soften it and make it soggy, and when a car is run with a tire in this condition the rubber is not only easily worn off, but can also be readily loosened from the fabric. Some motorists or drivers are not careful enough in running a car into the garage to see that it does not stand in a pool of oil. This is pure carelessness. The driver who keeps his machine in a public garage should insist that the manager of the garage keep the section in which his car is stationed thoroughly clean. If oil drips from his car, a means should be provided to prevent it from running all over the floor. In the upper section of Fig. 2 rather a common

## Hints for the Amateur

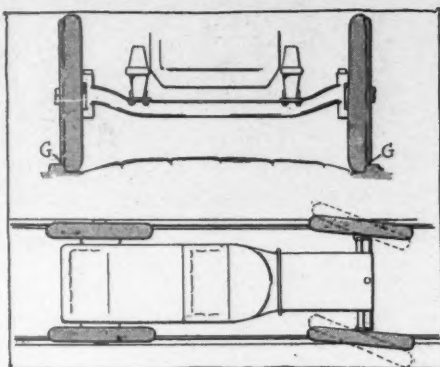


FIG. 1—CAUSES OF TIRE INJURIES

cause of grease on floors and tires is shown. Grease and oil has leaked out of the rear axle and been thrown out of the brake drum D, has accumulated on the tire as illustrated at G; and having been left standing for some time, a portion of that which was contained in the drum D has run down the spokes of the wheel and the tire and formed a pool P. This condition is brought about in two ways: Either the differential case C has been packed too full, or the felt washers placed at the end of the axles for the purpose of preventing leakage of oil therefrom have become worn down. The remedy in the first case is to remove some of the lubricant or perhaps use a heavier grade of oil, and in the second case to have new felt washers fitted in the axle ends. Another bit of carelessness on the part of some drivers is shown in the way they leave their cars in little pools of oil on the street. This can and always should be avoided. The lower portion of Fig. 2 shows two very common causes of excessive tire wear. At the left is shown a condition wherein the front wheels converge to such an extent that the rubber is being constantly worn off the tread. In actual practice front wheels of the car should con-

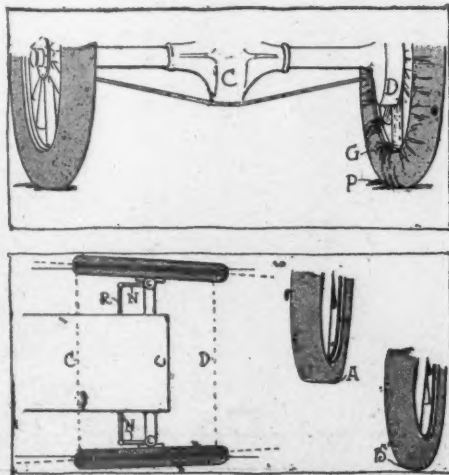
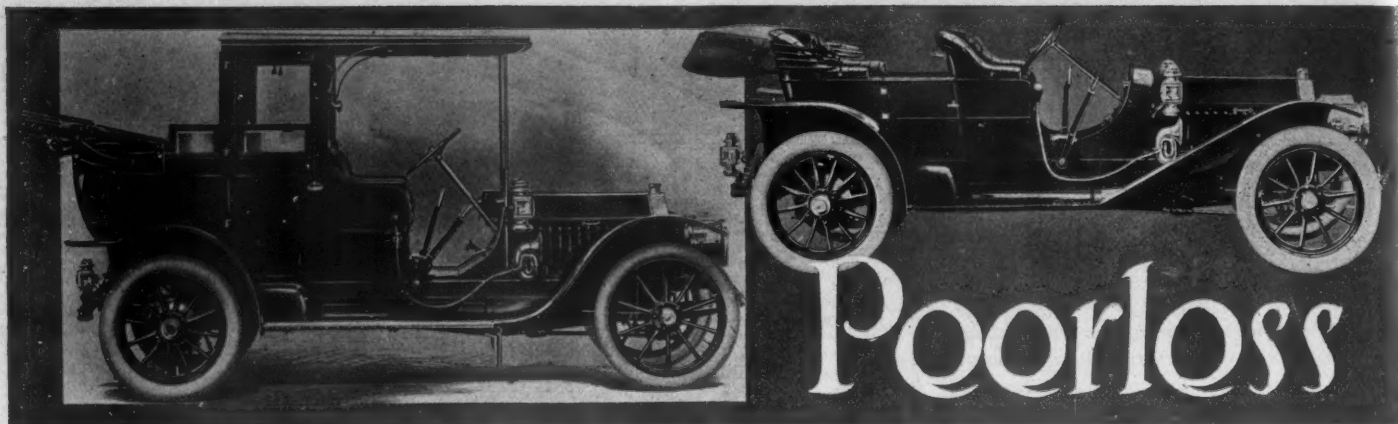


FIG. 2—MORE CAUSES OF DAMAGE

verge very slightly, the distance D being about  $\frac{1}{8}$  of an inch less than the distance C. The cause for this tendency of excessive convergence is due to maladjustment of the steering rod R or a bent arm N. In last week's issue of Motor Age a useful tool for testing the alignment of the wheels was shown in the Repair Shop columns. In spite of continual warnings from tire makers, dealers and motor car publications, improper inflation is still a common cause of inefficient service. At the right of Fig. 2 is shown how a tire should appear when properly inflated and how it appears when overloaded or insufficiently inflated, the overloaded or insufficiently inflated condition being shown at A and the normal condition at B. Motor Age always has been a strong advocate of the use of an efficient tire gauge because overinflation also is detrimental to a tire. A tire should contain just enough air to stand up full and round when not overloaded and if an effort is made to make it stand up full and round when overloaded it is working under an excessive strain. Every driver should make a strenuous effort to use the right-sized tires, the proper air pressure and not subject them to an unreasonable load.

## Mixing Kerosene with Gasoline

A motorist often runs short of gasoline within a few miles of a garage or station or a town where his supply may be replenished, and it is very annoying to have to walk these 4 or 5 miles or even to have to go to the first farmhouse that has a telephone and call up the nearest source of supply. This could often be avoided by mixing the kerosene contained in the lamps with that which is left in the tank, or by securing a little kerosene from the farmer and replenishing the supply in that way. After a motor has become thoroughly warmed up it will run very nicely on kerosene and often without an adjustment of the carburetor being necessary. Of course if the motor stops for want of fuel and is allowed to cool down considerably before a supply of kerosene can be obtained the kerosene will be useless, because it will be impossible to start the motor on it. Even were it possible to start the motor with the gasoline that might be contained in a priming can about the car unless this can contained a sufficient supply to warm up the motor it might be impossible to use kerosene even under these conditions. Still, if a motorist should be caught in this predicament, if he can add a supply of kerosene before the supply in his fuel tank is entirely consumed, it can be mixed with the gasoline and he may be able to travel to the next source of gasoline supply without trouble.



FIGS. 1 AND 2—SHOWING DESIGN OF LANDAULET AND PONY TONNEAU BODIES OF THE 1911 PEERLESS CARS

WITH the excellent facilities of one of the largest, most up-to-date and most elaborately equipped motor car plants in the world, the Peerless Co. of Cleveland, O., has started on the production of their 1911 models. The Peerless line for next year will consist of three distinct types which will include a model 31, with a 30-horsepower four-cylinder motor having a 5-inch bore and 5-inch stroke; a model 32 with a 50-horsepower six-cylinder motor, with a 5-inch bore and  $5\frac{1}{2}$  inch stroke; and a model 29 with a 20-horsepower four-cylinder motor having a 4-inch bore and  $4\frac{1}{2}$  inch stroke. The A. L. A. M. horsepower rating for these motors would be 40, 60 and 25.6 horsepower respectively. Upon these three chassis types ten distinct body styles will be built including a seven-passenger touring car, five-passenger close-coupled, seven-passenger limousine, seven-passenger demi-limousine and seven-passenger landaulet, which will be applicable to the standard chassis. There will be a three-passenger roadster body fitted to a roadster chassis; and a special chassis which will be similar to the standard type except for a special roadster dash, steering column and fender construction, will be provided for a five-passenger phaeton, a four-passenger pony tonneau, a four-passenger torpedo and a two-passenger enclosed coupe.

Standardization has been the keynote of Peerless construction for a number of years, and although there are no radical changes in the Peerless cars for 1911, there are a number of improvements and refinements to be found in the new product which go far toward increasing the comfort and convenience of the passengers.

In this category, a feature that will excite no small amount of interest, is the addition to the regular equipment of a small four-cylinder air-compressor pump for pumping tires. This device has the appearance of a miniature four-cylinder motor of the vertical type. It is secured to the front end of the gearset under the front floor boards, and is driven off the end of the countershaft. A little clutch, such as is used between the starting crank and the crankshaft of a motor, is

employed to bring the pump shaft into engagement with the end of the countershaft of the gearset; and the clutch is operated by means of a rod and lever which extends through the side member of the frame so as to be accessible without lifting the foot-boards. A single lead of brass tubing conducts the air from the cylinder heads of the pump to a coil of hose which lies ready for use on top of the fuel tank just under the driver's seat.

On models 31 and 32, the large four and six-cylinder cars, the bore of the cylinders is increased from  $4\frac{3}{8}$  to 5-inches so that the cylinder dimensions are now 5 by  $5\frac{1}{2}$  inches; the wheelbase of the four-cylinder model 31 is increased from 122 to 123 inches; a Bosch high-tension magneto has been adopted to replace the low tension type previously used, so that the induction coil used therewith is eliminated from the dash equipment; improvements are also to be found in the switch of the battery system so that either one of the two ignition systems may be used independently or both at the same time, and a yale lock and key is incorporated in the switch to secure it in a neutral position and prevent theft of the car. Further provisions to prevent theft of the car or its equipment, are a means for locking the tires to the tire-irons, the gear-shifting levers in a

neutral position, and of course, the cover of the tool-box to the body of the box.

Lubrication of the motor is now entirely by means of a simple circulating splash system, so that all external leads are eliminated except those leading to the two small indicators on the dash, and to the splash chambers of the crankcase. The reservoir is still cast integral with the crankcase; the hand pump is provided to replenish the supply in either of the two splash compartments and a plunger-pump situated at the bottom of the case and gear driven off a camshaft draws the oil through a strainer and forces it through the indicators on the dash.

To properly care for the increase in the size of the cylinders, the radiator on next year's cars is also of slightly greater capacity; the battery box, located on the right running board of this year's models, has been replaced by a special sheet metal compartment located inside the frame under the floor-boards of the tonneau and a dress guard covers the forward end of the rear springs instead of the step, thus improving the appearance of the car and facilitating access to and from the rear seats. The car's appearance is still further improved—by the design of the front fenders, which now corresponds to the curvature of the wheels, and by the metal shields

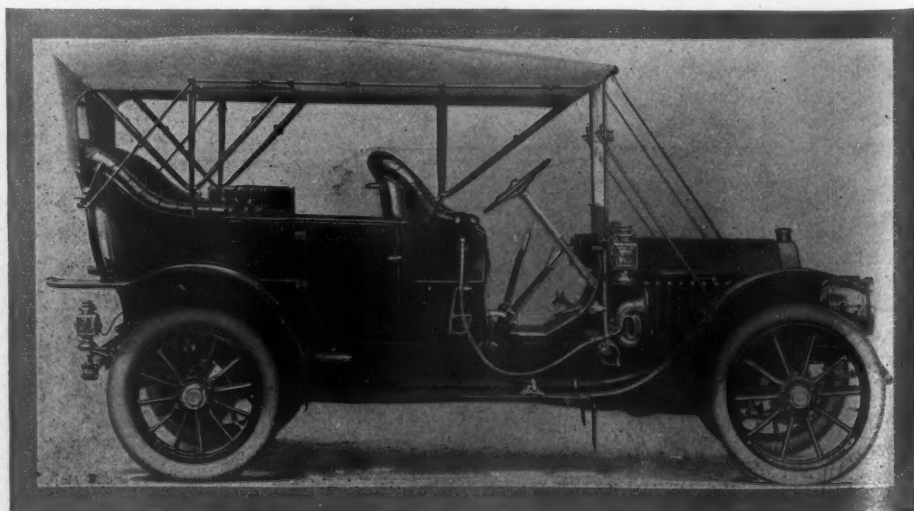


FIG. 3—PEERLESS SIX-CYLINDER TOURING CAR FOR 1911





FIGS. 3 AND 4—SHOWING TORPEDO AND LIMOUSINE BODY DESIGN OF THE PEERLESS CARS OF NEXT YEAR

fitted between the running-boards, the fenders and the frame; and an ingenious method of attaching the fenders to their brackets is employed, by means of which no bolts are allowed to pierce the fenders at any place.

Unlike in previous models, the emergency brake of the new car does not throw out the clutch, so that driving in hilly country is facilitated; the clutch collar is lined with babbit instead of fibre, to improve its wearing qualities; a plain bearing substitutes the ball-bearing used on the forward end of the crankshaft, making the crankcase a trifle longer; and a thick fibre gasket is placed between the case and cover of the engine gears to render them absolutely noiseless. Positive spring locking devices are now fitted to the hub caps to prevent their loss, and oil or grease-cups are present on every friction bearing in the running gear.

In Fig. 6 the general layout of the model 31 chassis, which, by the way, is almost identical with model 32, is clearly shown—the motor with its T type cylinders cast in pairs, and the selective sliding gearset being mounted on a drop sub-frame so that when the car is loaded, practically a straight line drive is obtained between the power plant and the rear axle. A study of figures 9 and 10 will dis-

close many interesting features relative to the arrangement of the outside fittings and general construction of this motor. Attention is called to the simplicity, accessibility and directness of all connections. The magneto M, Fig. 9 of the double ignition system is supported directly behind the gear from which it is driven, upon a substantial base cast integral with the aluminum crankcase; and it may be removed in a few seconds by loosening the wing nut N on the strap S, and disconnecting the wire leads L, from the bus-bar B. By means of this bus-bar all ignition wires are thoroughly insulated, readily connected and disconnected and all connections substantially made. The timer T, of the battery system is also well placed between the two cylinder castings and driven by means of a vertical shaft and bevel gears from the camshaft. The two ignition systems, then, for the 1911 cars are comprised of a battery system, with the battery located under the floor boards of the tonneau, a four-unit coil on the dash, the timer, as above described, between the two pairs of cylinders and a set of plugs; and a magneto system, consisting of the Bosch high-tension magneto and a separate set of plugs; the wiring for both systems being arranged in the bus-bar B for the greater

part of its length. All rods for the control of the ignition and carburetion are fitted with joints of the ball and socket type and are adjustable to compensate for wear so that all back-lash or lost motion in the control levers may be eliminated. The carbureter C with its long-mixing chamber and simple intake pipe combined, and with the auxiliary air valve V, located at the center of the Y-shaped construction, is purely a Peerless characteristic. A single-seated vertically-operated throttle valve is used through which the mixture is wrrawn with even distribution. This valve is controlled by a hand lever on the steering wheel, by a foot accelerator pedal and also by a governing device of the centrifugal type, which is very sensitive and automatically regulates the throttle opening to maintain even motor speed, irrespective of load or grade. The intake and exhaust valves of this motor are made of an imported alloy steel, taper seated, mechanically operated and interchangeable. The crankcase is a one-pieced construction having removable plates underneath for the inspection of the crankcase interior and the cover of the timing gearcase, which is an integral portion of the crankcase, is also removable. The crankshaft of the Peerless cars, which is supported on three plain bearings, may be removed with all its bearings, by pulling it out through the rear end of the crankcase. Turning to the exhaust side of the case. It is made from a solid piece of steel, is heat-treated and the bearings ground to size. Much care is taken to see that all reciprocating parts are properly balanced before assembling them into the motor, in order that vibration may be eliminated and the wear reduced to a minimum. All main bearings are fitted with pockets, which receive a constant supply of oil by splash from the crankcase.

Turning to the exhaust side of the motor, Fig. 10, note the simplicity of the exhaust pipe P and the inlet water manifold W; also the accessibility of the valves and push rod adjustments; and the rigid construction of the water pump A. This pump is driven by means of a spur gear inclosed with the rest of the engine gears in the oil-tight case E. A very simple and

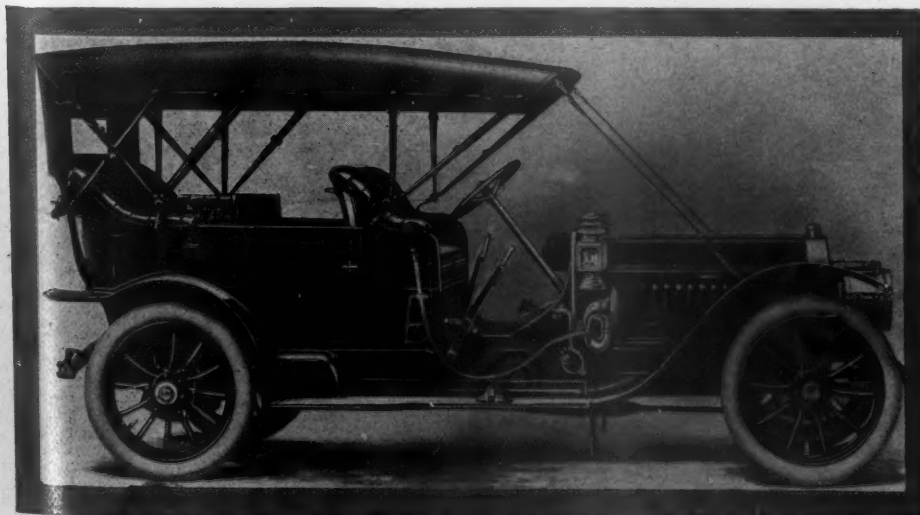


FIG. 5—PEERLESS FOUR-CYLINDER TOURING CARS FOR 1911

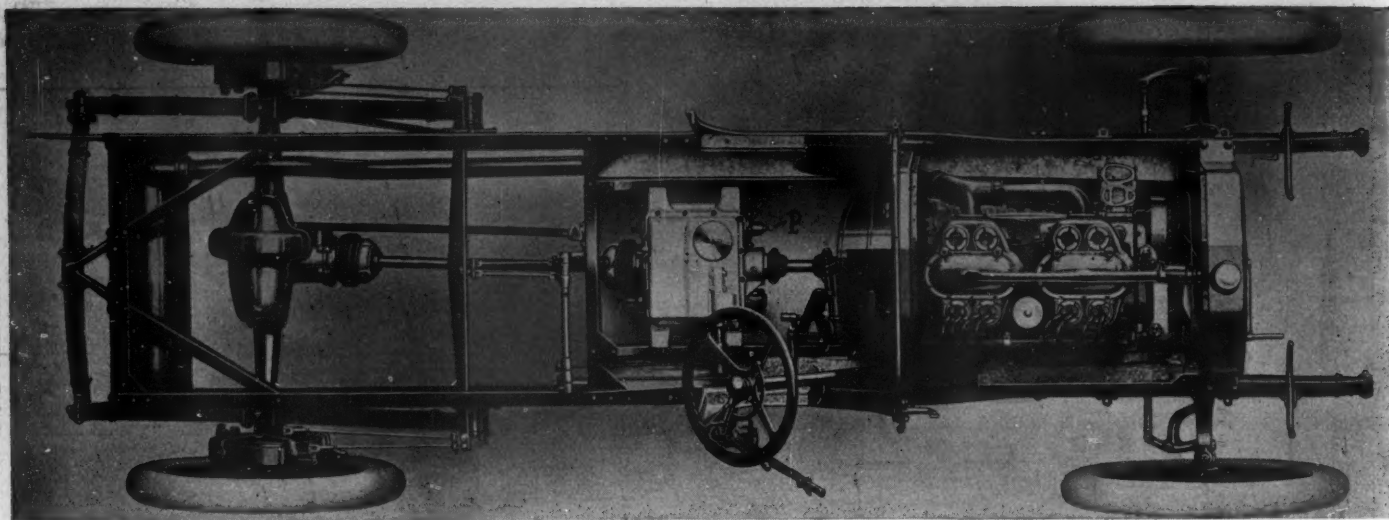


FIG. 6—A PLAN VIEW SHOWING THE ARRANGEMENT OF 1911 PEERLESS CHASSIS

ingenious universal coupling C is inserted in the pumpshaft to provide for any possible misalignment and it is so constructed that should the pump become frozen or in any other way rendered inoperative, the shaft would not be broken or the gears damaged, as one part of the coupling could remain stationary while the other part would revolve, making a very audible snapping noise that would at once indicate to the operator that the water pump was not in operation; thus eliminating the danger of overheating the motor on account of a failure of this part. The bevel gear and friction-driven fan supported at the forward end of the motor is clearly shown in this illustration with the new oil cup U in place. Lubrication of the water pump shafts is provided for by means of a grease cup conveniently located. The reservoir R for the lubricating system of the motor is just behind the water pump. The supply of oil in the splash compartments of the crankcase may be replenished by operating the handle H, which when the arrow upon it is directed to the left, forces oil through the lead L1 to the forward compartment and when to the right, through

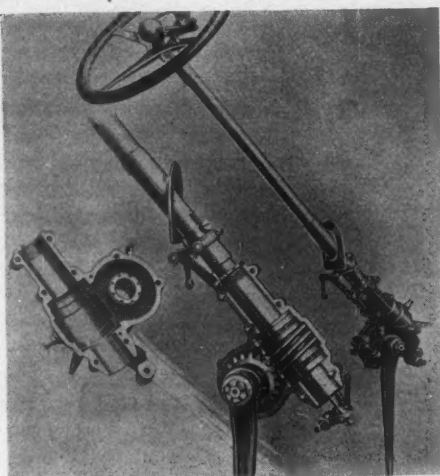


FIG. 7—PEERLESS STEERING-GEAR

the lead L, to the rear compartment. To replenish the supply in the reservoir one has but to remove the cap X which covers a large opening through which oil may be readily poured. To facilitate draining the oil from the splash compartments when it is desirable to replace it with a fresh supply, a lever N is provided in a convenient location which opens the pet cocks K, at

the bottom of the case, simultaneously.

Power from the motor to the gearset is transmitted through the internal expanding leather-faced band clutch as in previous models. The foot pedals thrust forward through a small opening in the floor board instead of operating through a long slot as in some constructions. Connection from the foot lever consists of a rod with ball and socket joints which are not only universal in action but large enough to reduce wear to a minimum. A short shaft with two universal joints is inserted between the clutch and gearset and the gearset itself is a simple, compact construction giving four forward speeds and reverse, direct drive being obtained on the third speed. Both the main and countershafts of this gearset run on annular ball bearings, and the new four-cylinder tire pump, although not shown in these illustrations, is attached to the forward end of the countershaft at the point P, Fig. 6.

There are two universal joints in the propellershaft, and telescoping leather dust shields furnish a casing for grease. The rear axle is of the full floating type and ball bearing through-

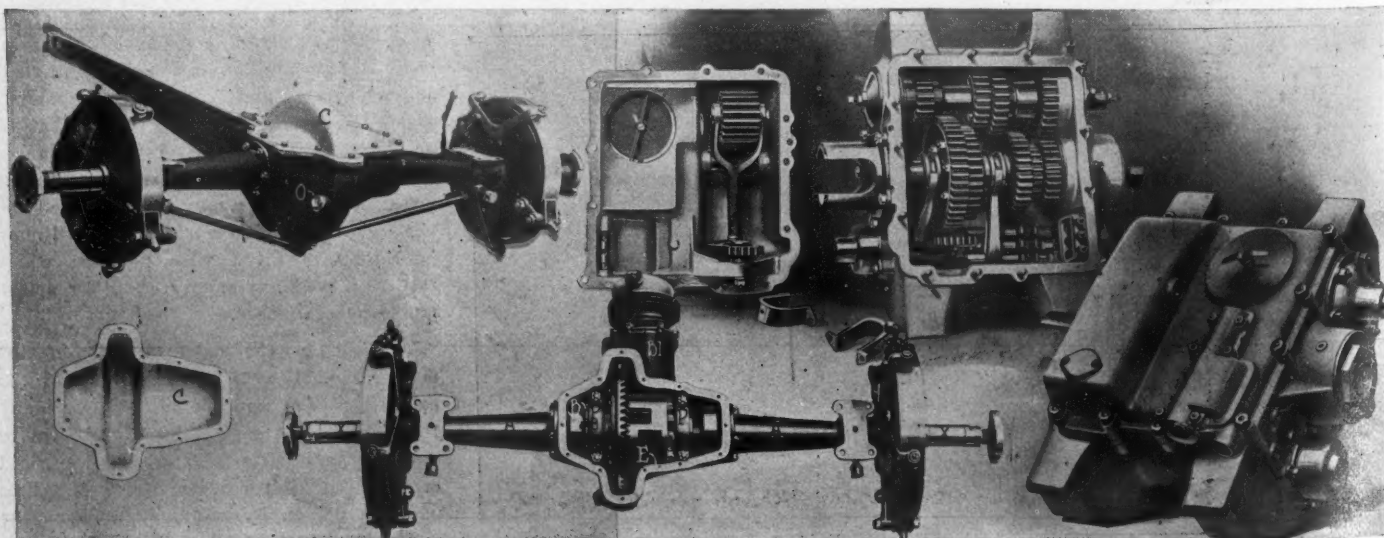
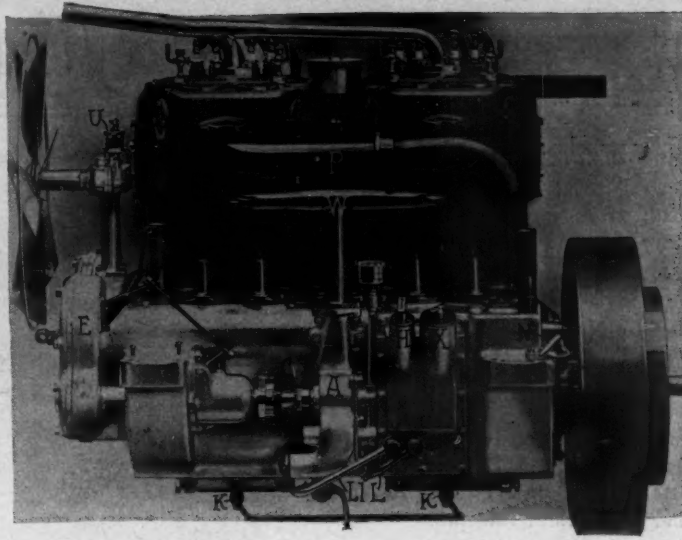
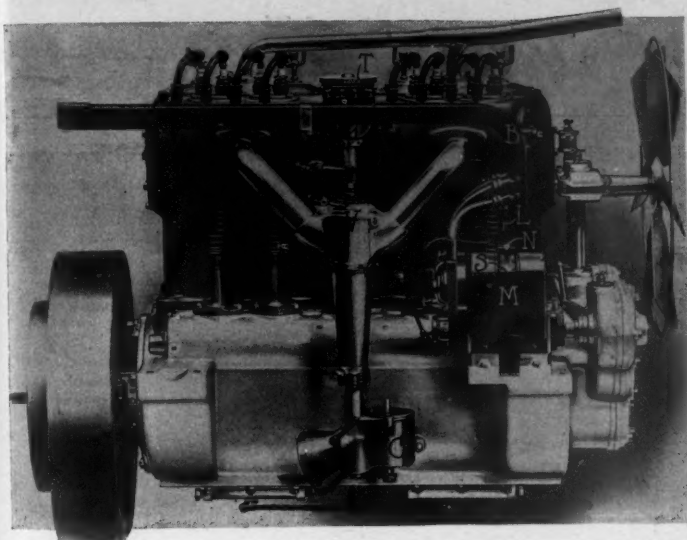


FIG. 8—SHOWING INTERESTING DETAILS OF PEERLESS GEARSET AND REAR AXLE CONSTRUCTION





FIGS. 9 AND 10—RIGHT AND LEFT SIDE OF THE FOUR-CYLINDER MOTOR

out. The load of the car is carried on the extremities X of the tubes A which are bolted directly to the cast steel casing E. On each side of the differential mechanism and connecting with the live axles, a universal joint of the internal and external gear type is provided to allow for the cambered axle construction and dishing of the rear wheels.

By removing the aluminum cover C and pulling out the drivingshafts L a few inches, so as to disengage the universal joints on the either side of the differential mechanism, the entire bevel gear and differential mechanism may be taken out after removing the straps P which secure the bearings. Adjusting collars B and B1 are provided for taking up any wear in the driven and driving gears, and a filling plug O is provided for replenishing the oil supply in the gearcase.

As for the running gear—the steering mechanism, the construction of which is shown in Fig. 7, is of the worm-and-gear type, the gear being a complete wheel and forged integral with the shaft to assure the greatest possible strength. The worm also is forged integral with the steering column, and self-adjusting ball thrust bearings are placed above and below it. All steering-rod connections are provided with leather coverings, which are packed with grease. The main frame of these cars as well as the subframe which supports the motor and

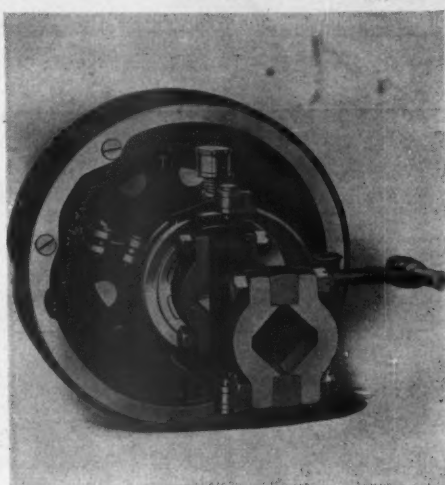
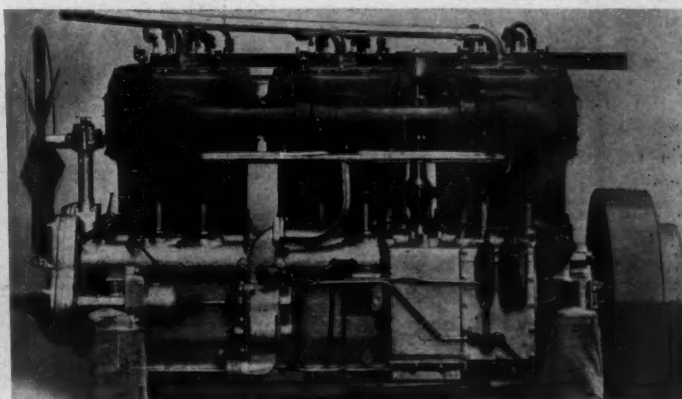
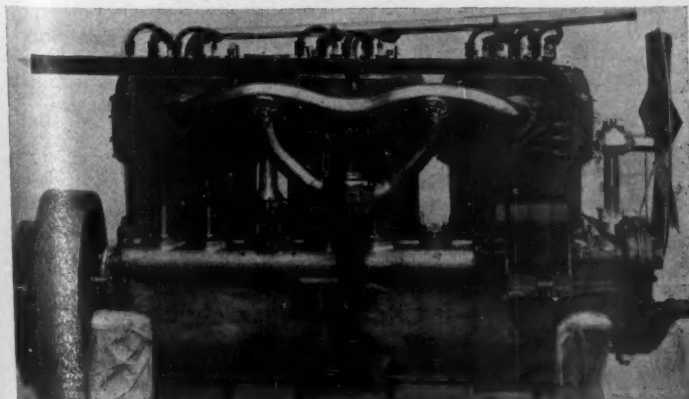


FIG. 11—PEERLESS CLUTCH

gearset is of cold rolled pressed steel of channel section. Its connection to the running gear is through long semi-elliptic springs in front, and the three-quarter platform spring suspension in the rear, which has been a feature of Peerless construction for a number of years. The two rear springs are attached in front to the frame and in the rear to a cross spring, which, in turn, attaches to a bracket on the center of the rear cross member of the frame, thus making a three-point rear suspension. Adequate facilities are provided on all spring connections for lubrication. The

front axle is a solid one-piece drop forging of I-beam section with spring saddles forged integral with the axle. The center of the front axle is the lowest part of the car. The pivot point of the steering knuckles is supported on special ball bearings and roller bearings are used on the front wheels. The connecting rod between the steering knuckles is a one-piece construction and is located behind the front axle so as to be guarded from all road obstructions. Thirty-six-inch wheels of the artillery type with dished spokes are used on both front and rear axles.

The regular equipment of the Peerless cars this year will include a mohair cape top, a glass windshield of the adjustable folding type for open bodies; also a Prest-O-Lite tank, two Rushmore multiplex diverging lens gas headlamps for model 31, two Besnard 9-inch headlamps for model 32, and in addition two combination oil and electric side lamps, a combination oil and electric tail light, a six-volt battery for lamps, a four-volt ignition battery, Marsh quick-detachable rims, a power-driven air pump for inflating tires, and a tool box consisting of two compartments, one for holding the Prest-O-Lite tank and one for the same tool equipment as heretofore furnished. The tool box top will be secured with a lock instead of the strap furnished last year; and means are provided for securely carrying extra tires.



FIGS. 12 AND 13—RIGHT AND LEFT SIDE VIEWS OF THE PEERLESS SIX-CYLINDER MOTORS

**WISCONSIN** Has 13,000—On June 16, 1910, license No. 13,000 was issued by the motor licensing bureau of the state department of Wisconsin.

**Fitts Is President**—The Lake Madison Motor Club of Madison, Wis., has elected the following officers: President F. D. Fitts; vice-president, T. A. Johnson; secretary, H. H. Frudenberg.

**Not Interested in Orphans**—St. Louis motorists either are too selfish or were too busy to give much time to the orphans' day outing. At least only fifty-four cars were furnished by members of the club, although President Samuel Capen and Alden Little, committee chairmen, and the other members of the orphans' day committee worked energetically to interest the other members of the club.

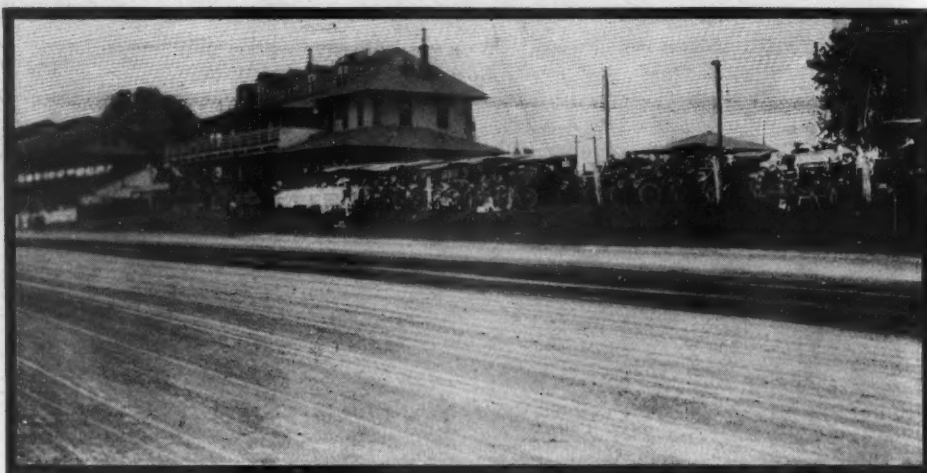
**Plan a Long Club Run**—The Automobile Club of Stark county, Ohio, is arranging for a club run to start July 9 and to extend as far as Detroit. The arrangements for the run are being made by the runs and tours committee. It is planned to touch Akron, Cleveland, Toledo, Sandusky and other cities in the run. Eight cars already have been pledged and other entries are expected to be in later.

**Run Is Postponed**—The Delaware Automobile Association was unable to have its sealed time run, which was scheduled for last Saturday, for the reason that the road between Wilmington, Del., and Oxford, Pa., the turning point, was not in good condition for part of the distance, due to protracted rains of the past few days. It is proposed to have the run next Saturday, if the conditions are right. The run will be to Oxford and return, going by one route and returning by another.

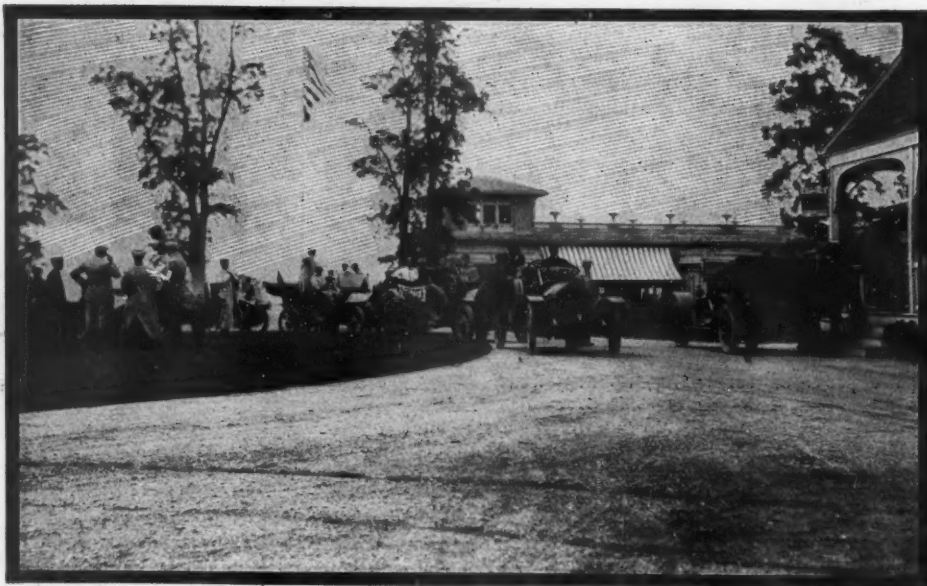
**Milwaukee Sociability**—The Milwaukee Automobile Club intends to hold a sociability tour of 3 days' duration in July. It is planned to run to Sturgeon Bay, 149 miles from Milwaukee, in extreme northeastern Wisconsin, and where a club was organized recently. The route is one of the finest to be found in Wisconsin for pleasure touring, and the vicinity of Sturgeon Bay has the finest roads in the northwest. It is planned to start Saturday morning and return Monday morning.

**Speedway for Omaha**—The Omaha Automobile Speedway Association was organized last week with a view to providing Omaha, Neb., with a 2-mile track. The plan is to utilize the abandoned mile track of the old fair grounds west of the city. This track is in excellent shape and if arrangements can be made with the owners, 80 acres will be secured and the work of rehabilitating it will be begun at once. Several dealers and others are awaiting the word from those who have the project in hand to subscribe liberally to the undertaking. Enough ground is available if needed to convert the old speedway from a mile into a 2-mile track. Among

## From the



POINT BREEZE TRACK MEET—CROWD AT CLUBHOUSE



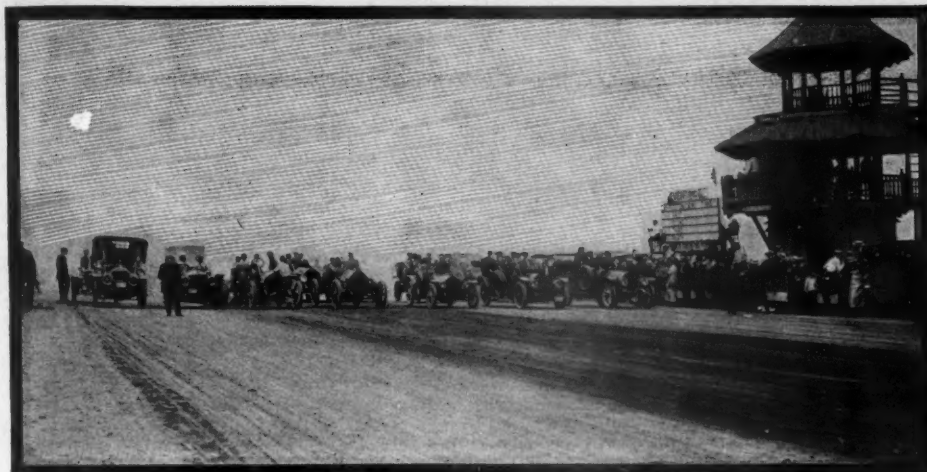
MONTAUK RELIABILITY RUN—CARS AT BEAUX ARTS



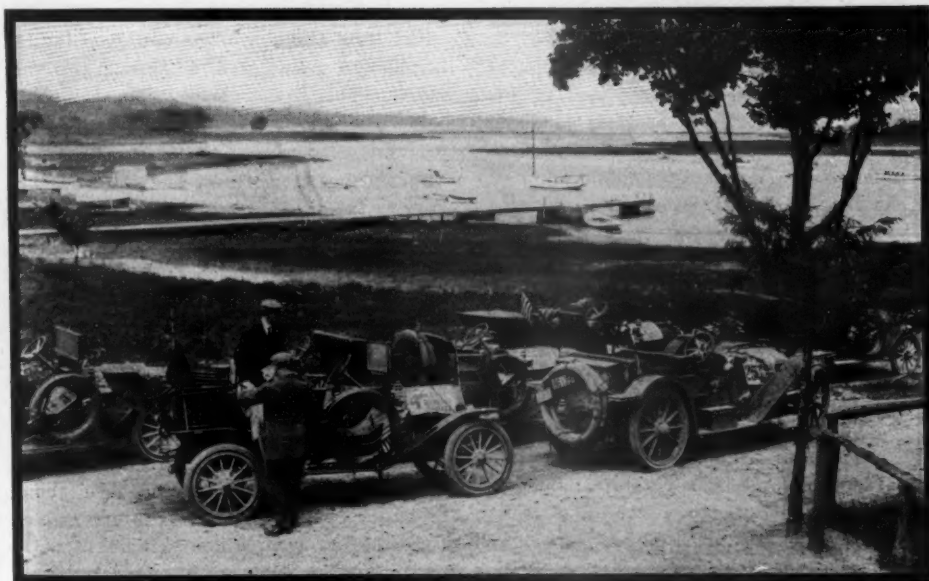
NEW JERSEY RELIABILITY RUN—FORD GOING INTO DOVER



# Four Winds



POINT BREEZE TRACK MEET—START OF GUESSING RACE



MONTAUK RELIABILITY RUN—CARS AT 3-MILE HARBOR



NEW JERSEY RELIABILITY RUN—GOING OUT OF NEWARK

the most interested in the undertaking are Clarke G. Powell, W. J. Kirkland, C. L. Gould, W. D. Hosford, O. Hibner and T. F. Wilcox.

**Team Reliability in July**—The Chicago Automobile Club and Chicago Athletic Association have selected July 28-29 as the dates for the third annual reliability team between the two organizations. In all probability the run will be to the Edgewater Club, at St. Joe, Mich.

**Still Barred From Island**—The legislature of the province of Prince Edward Island, Canada, by an unanimous vote, has refused to appeal the law making it a criminal offense, punished by a high fine, to run a motor car or any other motor vehicle on any of the public highways in the province.

**Grand Rapids' Celebration**—The fourth annual orphans' day of the Grand Rapids Automobile Club was held June 15, and 200 inmates of the Blodgett Home for Children and St. Johns' Orphan Asylum were given an outing. After a ride about the city the children were taken to the Grand river ferry, 14 miles west of the city, where a picnic was indulged in.

**Outing for Poor Kids**—Poor children of Wilmington, Del., to the number of between 200 and 250, are to have an outing next Friday to Delaware City and return, a total mileage of about 36. Arrangements for the trip have been made by a committee of citizens, of which Rev. D. M. Cleland is chairman, and with the assistance of Charles G. Guyer, secretary of the Delaware Automobile Association, who represents the association. The trip is to be made in cars loaned by citizens.

**Minneapolis' Way**—Nearly twice as many children as went last year enjoyed the tour given this year on June 15 by the Minneapolis Automobile Club to the orphans of Minneapolis. It started at 9 a. m. going out to the Bloomington Club, where games formed part of the program. The ride also took the young guests to beautiful Minnehaha Falls, and thence to the Longfellow zoo. A picnic luncheon was served. The party then ran to Fort Snelling, where some witnessed the drill on the parade grounds.

**Sprague Succeeds McKeen**—The Omaha Automobile Club of Omaha, Neb., last week elected the following officers: President, E. H. Sprague; first vice-president, W. R. McKeen, Jr.; second vice-president, Frank S. Parmelee; secretary, A. H. Fetter; treasurer, L. C. Nash; directors, John H. Parish, Dr. J. P. Lord, A. P. Guio and Gould Dietz. Mr. McKeen, president of the McKeen Motor Car Co., refused a reelection as president on account of press of business, but consented to become vice-president. The club decided to post signs and street signals at dangerous street crossings along the boulevards. The membership of the club is rapidly approaching the 300 mark.

**A** **NOTHER** Low-Priced Car—Kenosha, Wis., and Waukegan, Ill., capitalists are planning to establish a factory at Waukegan for the manufacture of a low-priced car. Arthur Gardiner, of Kenosha, is interested in the move.

**New Rubber Plant Growing**—The Kelly-Racine Rubber Co., of Racine, Wis., has started work on its plant. The first building is four stories high, with ground dimensions of 150 by 80 feet. It will be ready by September 1.

**Death of Detroit Tradesman**—James F. Baines, service manager of the Packard Motor Car Co., died at his home in Detroit on June 12, aged 35. His death was very sudden, being caused, it is believed, by ptomaine poisoning, brought on by eating lobsters.

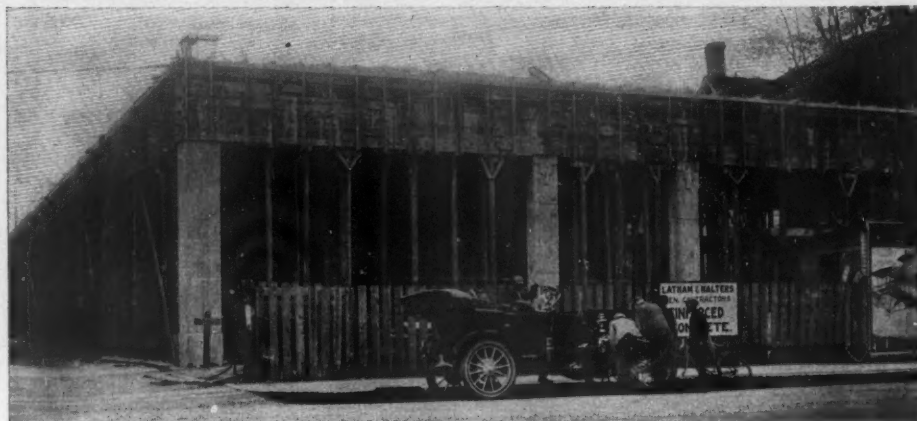
**Janesville Firm Moves**—The Willard-Harlow Mfg. Co., of Janesville, Wis., maker of motor specialties and accessories, has moved to its new factory in Spring Brook addition. The old plant is now occupied as a garage by Prelipp Brothers, who have been using part of the structure heretofore.

**New Reo Secretary**—J. Edward Roe, cashier of the Lansing State savings bank, of Lansing, Mich., has been elected secretary of the Reo Motor Car Co. to succeed Edward F. Peer, resigned. Mr. Roe will assume his new duties September 1. Donald E. Bates has been elected treasurer of the company. A delegation of between forty and fifty bond agents came to Lansing on the occasion of the disbursing of the dividend declared by the company. It is said that from \$100,000 to \$125,000 worth of bonds sometimes are disposed of on these occasions.

**Study Rambler Methods**—The Superintendents' and Foremen's Club of Chicago, an organization of eighty-five members, composed of the managers of the mechanical plants in the middle west, all experts in advanced mechanics, recently visited the plant of Thomas B. Jeffery & Co. at Kenosha, to study the system of advanced physical and chemical tests employed in determining the quality and efficiency of Rambler parts and to watch those methods by which standardization of parts has been attained and the inspection system which the Rambler people maintain.

**May Move to Downing**—Plans have been perfected whereby the plant and headquarters of the Starr Motor Car Co. of Minneapolis will be installed at Downing, Wis., the new junction point of the Soo line in Dunn county. Additional capital has been interested in the concern and a tract of 45 acres acquired. While citizens of that place are said to have subscribed liberally to the project, some money will also be raised by the sale of adjoining lots. Work already has been commenced on two buildings, each 200 by 45 feet in dimensions. Four models will be turned out by the concern at its new

## Among the Makers



START OF NEW \$1,000,000 MOTOR ROW IN INDIANAPOLIS

factory. All will be fitted to the same chassis, but will be equipped with different types of bodies.

**Recognition for Simms**—Frederick R. Simms, president of the Simms Magneto Co. of New York, in recognition of his services to motor car construction and magneto ignition, in particular relation as founder of the Royal Automobile Club of Great Britain and Ireland, and its early connection with the Automobile Club of America, has been elected an honorary member of the latter club by a unanimous vote of the board of governors.

**Pennsylvania Progress**—The Pennsylvania Rubber Co., Jeannette, Pa., contemplates the erection of additional buildings and the installation of new machinery. Attendant upon these plans, an additional \$500,000 has been put into the business, increasing the capital stock to \$2,000,000. The business of the company was thoroughly reorganized February 1, 1910. Herbert Du Puy, president of the Crucible Steel Co., assumed the presidency of the Pennsylvania Rubber Co. Seneca G. Lewis is general manager. O. M. Du Puy re-

tains the office of treasurer as heretofore. The factory is in charge of Superintendent John J. Moriarity.

**Has New Foundry**—The new foundry of the Racine Brass and Aluminum Co. at Racine, Wis., is completed. The company makes a specialty of motor car parts and castings.

**Recovering from Fire**—The Racine Mfg. Co. of Racine, Wis., is about to occupy the first new building erected since the fire of December 12, 1909, which almost totally destroyed the big body plant. The building is four stories high, of large ground dimensions and includes the offices.

**Opens in Chicago**—The Hartford Suspension Co. has opened a Chicago branch at 1458 Michigan avenue under the management of William P. Pollitzer. A machine shop fully equipped with modern tools and in charge of skilled operators makes it possible to complete attachments with dispatch.

**Dorman Promoted**—F. D. Dorman, formerly secretary of the Maxwell-Briscoe Motor Co. and more recently secretary of the United States Motor Co., has been made vice-president and general manager of the Maxwell-Briscoe Motor Co., with headquarters at Tarrytown, N. Y. In his new capacity, he will have absolute control of the Maxwell-Briscoe Motor Co.'s interests.

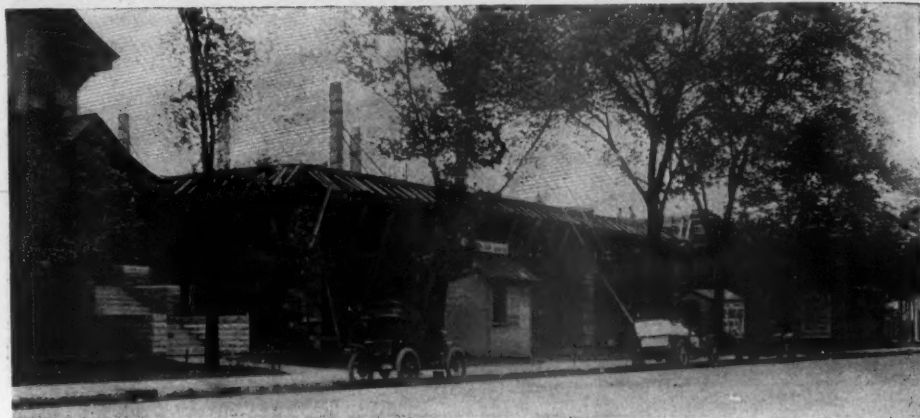
**Alpena On the Map**—Incorporation papers of the Alpena Motor Car Co., of Alpena, Mich., have been forwarded to the secretary of state. The capital is \$450,000, of which \$300,000 is common stock and \$150,000 preferred. At a stockholders' meeting, D. D. Hanover, William Krebs, P. Culligan and W. B. Roberson, of Alpena, and C. H. Nunnally, H. V. Grosbeck and W. N. Trombley, of Mount Clemens, were chosen directors. The officers are: President, D. D. Hanover; vice-president, William Krebs; secretary and treasurer, William Roberson. The company will manufac-



NEW GOODRICH INDIANAPOLIS BRANCH



# and Dealers



PROGRESS OF WORK ON INDIANAPOLIS MOTOR ROW

ture a four-cylinder 35-horsepower 112-inch wheelbase car. To secure the industry the people of Alpena gave a bonus of \$50,000.

**Making a New Tire**—The Ferromatic Tire Co. of Manitowoc, Wis., incorporated recently with a capital of \$11,500, is now completing its tools, dies, patterns, etc., and plans to start manufacture of the new tire within a few weeks.

**New Moon Plant Planned**—Plans for the Moon Motor Car Co.'s new factory have been completed. The building is to be four stories and have a total floor space of 6 acres. The plant will be fireproof and modern in every manner, the sides being principally of glass, thus assuring plenty of light. The new plant will be near the Moon's present factory so that the old buildings may be utilized for some of the various other enterprises of the company.

**City Buys Gasoline**—An indication of the amount of gasoline required to operate motor cars owned by the city government in Indianapolis is shown in a contract the board of public works of that city is about to make. This contract will provide for a minimum of 10,000 gallons of gasoline for the year beginning July 1. Bids have been submitted at a rate of 11½ cents a gallon with the privilege of benefitting by any decrease that may take place in the market during the year.

**Pierce's Big Dining Room**—With the completion of the addition to its administration building during the summer the Pierce-Arrow Motor Car Co. of Buffalo will have one of the largest and most complete dining rooms for employees in the world. The present dining room for employees at the Pierce-Arrow plant has a seating capacity of 800 and the equipment includes a complete kitchen, bakery, grocery store, meat shop, ice plant and laundry. So excellent is the service that the entire 800 men who take their lunch there can be served within 2 minutes after the noon whistle has blown. When the

new part of the administration building is completed there will be a seating capacity for 1,950 men.

**Making Plugs in Canada**—The R. E. Hardy Co. of Chicago has commenced the manufacturing of Sta-Rite ignition plugs in Canada. The factory and office are located at 2 Ouellette street, Windsor, Ont., with Ed. A. Neiderstadt in charge.

**Joins Kelly-Racine**—J. H. Dwight has resigned as secretary and treasurer of the Racine Steel Castings Co., of Racine, Wis., to become secretary of the Kelly-Racine Rubber Co., S. H. Standish, formerly with the Finished Castings Co., of Philadelphia, succeeds Mr. Dwight.

**More Hoosier Prosperity**—The already large amount of garage building in Indianapolis under way at this time will be increased by the immediate construction of two modern and fireproof garages. These will be for the sales branch of the Moon Motor Car Co. and for the Inter-State Motor Sales Co., which has the agency for the Inter-State. The Moon company is build-

ing at 324 North Capitol avenue, close to the \$1,000,000 motor row being built by the Globe Realty Co. It will have a two-story and basement structure. The Inter-State people are building at 427 North Meridian street in the exclusive residence section.

**Rambler Changes Title**—The Thomas B. Jeffery Co. is the new name of the big Rambler works at Kenosha, Wis. Thomas B. Jeffery & Co. has been reorganized, following the death of Mr. Jeffery. Charles T. Jeffery has been elected president. The new company has been incorporated with a capital stock of \$3,000,000. Kate E. Jeffery, widow of the founder of the concern; Charles T. and Harold W. Jeffery appear as incorporators. There will be no change in the policy of the company.

**New Goodrich Branch**—The Indianapolis branch of the B. F. Goodrich Co. is at 217 North Illinois street. It is the most recent branch of the Goodrich company to be put in operation. Previously the central Indiana territory was handled directly from Akron. But the growth of business has been so great, a branch had to be arranged for. Since the establishment of the branch the limit of Indianapolis territory has been moved farther south, to include all the southern counties except those along the Ohio river.

**Pierce School Closed**—After having been open for 5 months the school of instruction at the Pierce-Arrow Motor Car Co. has been closed for the summer. The courses of instruction will be resumed during the winter. For several years this school has been in operation, the students being of three classes, chauffeurs, owners and garage men. Classes are of 2 weeks' duration and include very thorough instruction on the subjects of assembly, adjustments and general care of the car, and some driving practice. Since the opening of the school in the winter 130 men have taken the course of instruction in Pierce-Arrow construction.



SPLITDORE EXHIBIT AT RECENT ITALIAN SHOW IN TURIN

## METHODS USED IN TESTING INTER-STATE CARS

**R**EALIZING that one of the most necessary requirements of the successful motor car manufacturer is a means for insuring the satisfactory assembly, adjustment and testing of a motor before it is assembled into the chassis and of the complete chassis, the Inter-State Automobile Co., Muncie, Ind., has gone to no little trouble and expense in providing itself with the proper equipment for this.

Upon the efficiency of the test which the chassis when complete receives, depends the successful operation of the car in its finished state. Many of the little details are sometimes overlooked and often important adjustments are not properly made on the different parts, which go to make up a motor car, as they pass through the various assembly and machine departments. In Fig. 1 one of the motor testing blocks of the Inter-State company is shown. It consists of a rigid concrete base upon which the motor may be readily mounted, with gasoline and water connections conveniently arranged about it; a dynamometer properly lined up on another concrete base directly behind that of the motor; and an electrical switch-board and rheostat for regulating the load on the motor, accessibly located on the wall. When a motor comes from the assembly room and before it is mounted on the testing blocks, owing to the fact that all bearings are finished to exact size and no clearance allowed, it is very stiff. This necessitates running in of the motor by other than its own power. The engine therefore is mounted on a rack with the flywheel in line with a loose pulley carrying a belt from an overhead countershaft which is in continuous operation. The running in of the motor by the countershaft usually takes about 2½ hours, after which it is run on its own power for about 7 hours, during which time a thorough test is given to discover any

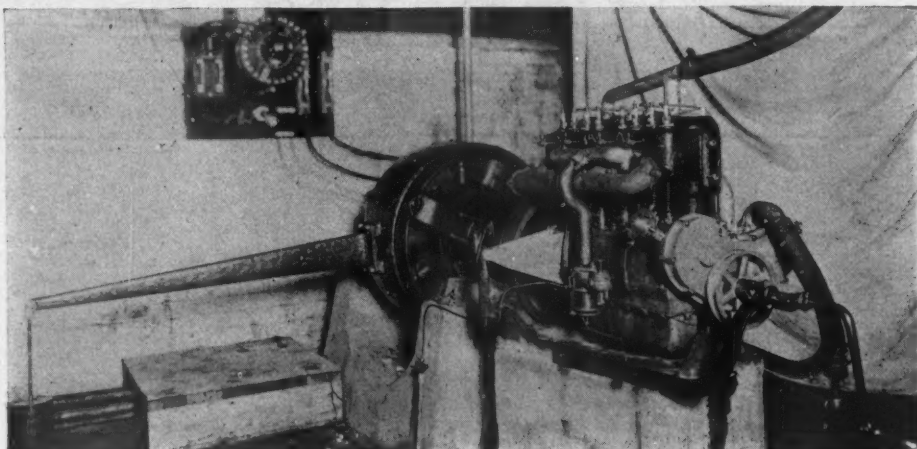


FIG. 1—METHOD OF TESTING MOTORS IN INTER-STATE PLANT

variations in operation, such as knocks, or noises due to defective bearings or ill-fitting timing gears. After satisfying the block test inspectors, the motor is taken down and all bearings readjusted to meet ordinary running conditions; the motor then is ready to be put in the chassis for the complete chassis test.

Fig. 2 shows the equipment for the complete chassis test with one chassis arranged for action. This consists of two trucks upon which the chassis is mounted, overhead water and fuel connections arranged near the front end and a fan dynamometer arranged on a wooden base or platform at the rear, which is chain driven from the rear axle of the chassis. The chassis, it will be noticed, is not on wheels, but is mounted on two trucks with the rear axle tubes bearing against two struts rigidly fastened to the base of the heavy open platform which is secured to the floor. The drive from the rear axle of the chassis is taken by means of double side chains from sprockets, mounted thereon instead of wheels and transmitted to smaller sprockets on the ends of the

fan shaft; the smaller sprockets giving the fan shaft a ratio of one to two with the rear axle. Thus, when the fan shaft is being driven at 400 revolutions per minute the rear axle is running at 200. A speedometer which may be readily connected to the fan shaft, as shown at the left of the photograph, is used to indicate its speed. In this test, for the first 2 hours, the chassis is run at a medium speed with first-speed gears in mesh, next the gears are shifted to second speed.

The chassis dynamometer test is a continual high power test, giving the chassis a steady resistance and allowing the stiffness to be worked out thoroughly. Its special advantage lies in allowing a thorough adjustment of not only the motor, but of the clutch, gearset, universal joints, propeller shaft and rear axle. To complete the chassis test with the fan dynamometer a 2-hour run on high speed is given; then a thorough final inspection is made by the head tester and a road test is made to assure that the springs, steering gear, frame and all stationary parts are of proper construction.

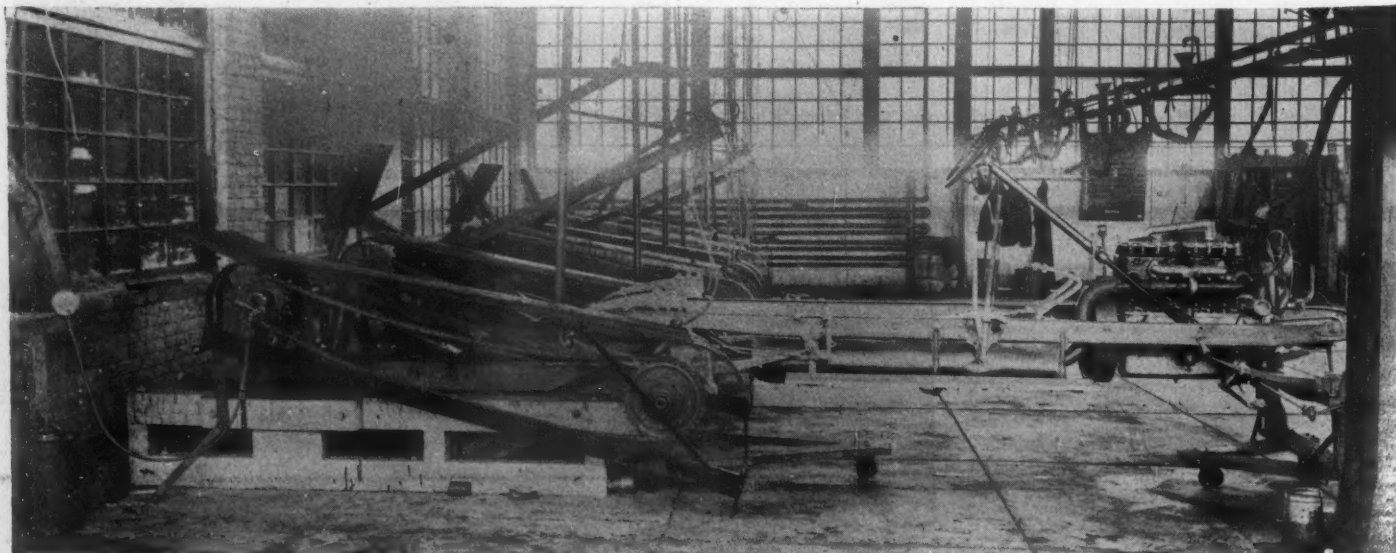


FIG. 2—FAN DYNAMOMETERS USED IN TESTING THE INTER-STATE CHASSIS





# Development Briefs



FIG. 1—SURE LOCK SAFETY DEVICE

## Self-Closing Can

C. W. JOHNSON, of Kaukuana, Wis., has applied for American and foreign patents on a self-opening and self-closing can, adaptable especially for gasoline. No vapors can escape, it is claimed, making it a safe device particularly in garages. The flow always is uniform and is obtained by holding the can in the position only that the spout is in the proper position. No fluid escapes if the can is laid on its side or held with its bottom upturned. There is a special air vent which regulates the uniform flow, with a special vent for insertion of a funnel, which when withdrawn closes the can air-tight.

## Sure Lock Safety Device

One of the principal sources of accidents to drivers and owners is that caused by cars being started with the gears in mesh, due to some one having meddled with the levers, placing one of them in mesh while the owner or driver was away. A lock which would dispense with this trouble also would reduce the number of cars stolen, for if it would prevent shifting of the levers, it would render the car inoperative. A lock of this character has been designed and placed on the market by side. The slant of the dash is such that dust is deflected over the driver's head.

the first one to be brought out was designed for Cadillac cars, and especially fits that make, the lock is suitable for any make of car having a similar gear-shifting quadrant. Others are being brought out for other makes of cars, having a different quadrant. Such is the merit of the little device that the Cadillac Motor Car Co. has taken it up and listed it in its catalog as an extra.

As to simplicity, the lock, Figs. 1 and 2, consist of a specially-shaped brass plug, with a lock attached to the upper end by means of a strong chain, while the lower end of the plug carries a lug or ear with a hole for the lock to go through. In the upper end of the plug, there is milled a notch, just the size of the hand lever at the level of the top of the quadrant. One of the sides of the plug carries down in a long extension, which is both wide and thick, so wide and thick, in fact, as to take up all of the space in the shifting fork that the hand lever usually takes up when shifted over to engage any gear. This makes it impossible to shift the hand lever over to that side. Similarly, the hand lever might be shifted over to the other side, but the long extension then would come directly in line with the stationary bars of the quadrant, and thus prevent any forward or backward motion. The hand lever is thus, to all intents and purposes, not movable—without unlocking the padlock, removing it, and then, removing the brass plug. The latter may not be removed without unlocking the padlock, on account of the size and shape of both the shifting fork and the extension of the brass plug, designed for this purpose.

## New Ideas in Bodies

For the season of 1911 there promises to be many new ideas in bodies and body equipment. Already several of them have been brought out. One of the latest is the Dutch door, the idea of W. J. Mead, secretary and general manager of the Olds Motor Works, of Lansing, Mich., who thinks so well of it that he has applied for



FIG. 2—SURE LOCK SAFETY DEVICE

a patent on the idea. The Dutch door is built in two sections, upper and lower. It is detachable and designed as a front door. The two sections are fitted together as a unit by means of dowels, so that it is necessary to use only one handle and lock, fitted to the lower half. The Dutch door gives the straight line effect and at the same time it has the claimed advantage over the ordinary high front door because the upper half can be easily and quickly removed or the entire door can be taken off without in any way detracting from the appearance of the car.

Another new idea is that of Erik Heyl and Brunn & Co., of Buffalo, who have turned out a torpedo body for which considerable novelty is claimed, as may be seen by the accompanying illustration. On both sides the tool box is of the same size as the running board and contains more than the necessary space for two gas tanks, extra tubes and tools. The right side of the body is entirely enclosed and the running board is provided with suitable brackets for holding a number of suitcases. The rear of the car is fitted with tire brackets for two casings, while one or two more can be carried in adjustable brackets on the side. The slant of the dash is such that dust is deflected over the driver's head.



FIG. 3—DUTCH FORE-DOOR ON OLDSMOBILE

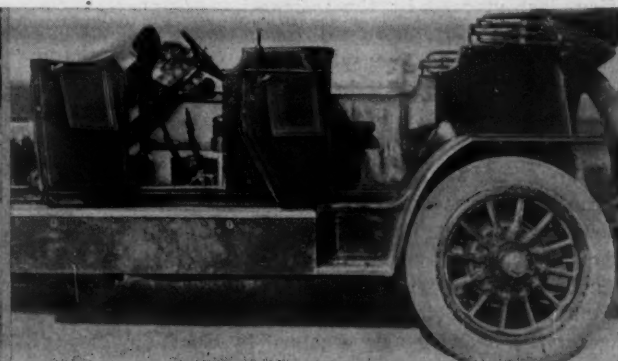


FIG. 4—BODY DESIGN BROUGHT OUT IN BUFFALO



# Brief Business Announcements



**DETROIT, Mich.**—The Motor Appliance Co. has increased its capital from \$25,000 to \$50,000.

**Detroit, Mich.**—Henry F. Tully, a certified public accountant of Detroit, has joined the office force of the Clark Power Wagon Co. at Lansing, Mich.

**Phoenix, Ariz.**—The Phoenix Auto Co. is to have a new garage on North Central avenue. The building will be of brick, floored with cement and ornamental in exterior.

**Philadelphia, Pa.**—A permit has been granted to H. L. Lovett for a one-story garage, 100 by 40, at the northeast corner of Broad street and Windrim avenue for G. C. Seidel, to cost \$8,000.

**Buffalo, N. Y.**—A permit has been granted to the Buffalo Bag Co. for a one-story concrete block garage to cost \$2,100. Also to Charles Weston, 249 Summer street, for an addition to brick garage to cost \$1,793.

**Topeka, Kas.**—The Stafford Motor Car Co.'s garage, corner of Seventh and Quincy streets, has been bought by Albert E. Jones and Theodore Johnston of Emporia. The new owners will conduct garage under the name of the J. & J. Motor Car Co.

**Houston, Texas.**—The City Motor Car Co. has moved into its new two-story brick garage at the corner of Texas and Caroline streets with C. O. Weir as manager. There are two floors, 50 by 100. The company handles the Pittsburg Six and the Johnson truck and pleasure cars.

**Terre Haute, Ind.**—O. Z. Miller, proprietor of the Automobile Hospital, 512-514 North Ninth, has changed the name to Miller's Automobile Repair and Machine Works. Extensive improvements have been completed, including improved modern machinery and 2,000 feet of additional floor space.

**Detroit, Mich.**—Sidney J. Stern, formerly New York city representative of the Automobile Trade Directory, has been promoted to the management of the Detroit office, just vacated by the resignation of C. K. Brauns. Mr. Stern will cover western New York and Pennsylvania, as well as the whole states of Ohio and Michigan in the interests of the directory.

**Detroit, Mich.**—Collins & Co. have taken the state of Michigan agency for the Marmon and are temporarily located at 732 Woodward avenue, Detroit. With the rumor that the new agency building above Warren street, on Woodward avenue is for Grant Brothers, Collins & Co. are negotiating for the building now occupied by the Chalmers agents, which would afford more room for the display of Marmon cars. The

Clark power wagon also will be handled and several other makes to be announced later.

**Detroit, Mich.**—Frank Dunnell is leaving the Ford factory to become assistant Ford manager at Atlanta, Ga. E. T. Backus, of Detroit, has joined the Ford branch at Houston, Texas.

**Detroit, Mich.**—A. E. Barker has resigned as sales manager of the Standard Auto Co., state distributor of the Packard, and will be succeeded by Charles E. Morton, city salesman for the past year.

**Seattle, Wash.**—During the past week the Regal Motor Sales Co., Seattle branch under the management of O. C. Allen, was opened at 301 East Pike street. A number of Washington sub-agencies will be established soon.

**Detroit, Mich.**—Charles E. Morton has been appointed sales manager for the Standard Automobile Co., distributor of the Packard motor cars and trucks in Michigan and northern Ohio. Mr. Morton succeeds A. E. Barker.

**Newark, N. J.**—Gimbel Brothers of New York are having plans prepared by A. H. Thompson for a large one-story brick garage, to be erected on North Fifth street, near Fifth avenue. The structure will cover a plot 100 feet square and will be

## Recent Incorporations

**New York**—Sears-Crox Co., capital stock, \$30,000; to deal in motor cars, supplies and accessories; also manufacture and deal in speed-controlling and recording devices for motor cars, vehicles, etc.; incorporators, Paul Muller and E. S. Gelath.

**Erle, Pa.**—American Motor Sales Co., capital stock \$10,000; incorporators, H. E. Kies, L. Oothoudt and W. P. Gifford.

**Gaylord, Mich.**—Gaylord Motor Car Co., capital stock \$100,000; to manufacture motor cars; incorporators, A. E. C. Comstock, Frank A. Kramer, John L. Belton and Lee Morford.

**Terre Haute, Ind.**—Smith Motor Co., capital stock \$25,000; to manufacture motor car parts; incorporators, W. B. Smith, E. B. Smith and M. B. Shelton.

**Richmond, Va.**—Southern Motor Works, capital stock \$400,000; to build a plant for manufacturing motor cars.

**Georgetown, S. C.**—Mouzon & Fraser Co., capital stock \$1,000; to deal in general motor boat and motor car supply business; incorporators, L. Mouzon and S. S. Fraser.

**New York**—Typhoon Signal Co., capital stock \$20,000; to manufacture and deal in motor car, marine and railway signals; incorporators, George Stoddard, Edwin L. Kerr and Otto H. Droege.

**New York**—Bushey Demountable Rim Co., capital stock \$20,000; to manufacture and deal in motor cars, parts and accessories, etc.; incorporators, Gerard B. Lambert, Ely J. Bushey, and Frank J. McCoy.

**New York**—Autofactors' Corp., capital stock \$2,000; to manufacture and deal in motor car specialties and accessories; incorporators, E. J. Forhan, G. F. Martin and H. P. Jones.

**New York**—Mohican Mfg. Co., capital stock \$50,000; to manufacture and deal in motor cars, motor cycles, airships, motor boats, engines, etc.; incorporators, T. L. Dennis, L. A. Essner and F. H. Smith.

one open floor, with but four columns to sustain the roof. The cost will be about \$12,000.

**Visalia, Cal.**—T. H. Thompson of Tulare has let a contract to Oscar Parlier for a garage, to be erected at a cost of \$5,500.

**Willows, Cal.**—Work has been begun on the new garage building, being erected by the Willows Garage Co. The building will be of brick, one story high.

**Louisville, Ky.**—Hite D. Bowman has purchased the vacant lot on the west side of Fourth avenue near Oak street, on which he plans to build a garage to cost \$9,000.

**Saginaw, Mich.**—The Marquette Motor Co. has increased its capital stock from \$300,000 to \$800,000 and the Oakland Motor Car Co., of Pontiac, has increased from \$200,000 to \$800,000.

**Philadelphia, Pa.**—Work will be begun on the large addition to be built to the Woods electric garage at the northeast corner of Twenty-first and Market streets. The new building will be four stories, 220 by 70, and will cost \$150,000.

**Newark, N. J.**—Plans are being filed for the erection of a large addition to the garage and warerooms of the Ellis Motor Car Co. in Washington street. The structure will be 50 by 100, four stories, reinforced concrete floors. The cost is to be \$25,000.

**Kansas City, Mo.**—The Broadway Garage and Sales Co., distributor of the Clark, has opened a new garage and salesroom at Thirty-fourth and Broadway. The building has floor space of 7,500 square feet. F. G. Biggs will be in charge of the electric charging plant.

**Greenville, Pa.**—The Greenville Metal Construction Co. of Jamestown, N. Y., is to occupy the buildings formerly belonging to the Shelby Steel Tube Co., where it will manufacture motor car parts and equipment for steel passenger coaches. The company is capitalized at \$600,000.

**Detroit, Mich.**—C. K. Brauns, formerly representative of the Automobile Trade Directory, located in Detroit, has left that concern to take the position of vice-president and sales manager of the Radle-Clark Sales Co., which has contracted for the entire output of the Clark power wagons.

**Jacksonville, Fla.**—Frederick E. Gilbert has incorporated his motor car business capitalized at \$100,000. The new company has temporary offices, and as soon as the permanent organization is perfected, officers will be elected, with Mr. Gilbert as president of the company. Associated with him are his brothers, Robert L. and John E. Gilbert.